RSTS/E

November 1978

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THE SOFTWARE DISPATCH

digital

SOFTWARE SERVICES

OPERATIONS GROUP

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RSTS/E SOFTWARE DISPATCH

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The RSTS/E Software Dispatch complements the **Software Dispatch Review for RSTS/E V6C-03.** It publishes new and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections. Much of the material is developed from answers to customer Software Performance Reports (SPRs) significant to the general audience, and is printed here to establish a reference notebook for the customer's software interests.

PRODUCTS SUPPORTED in the RSTS/E SOFTWARE DISPATCH

APL-11 V1
ASSIST-11 V1
BASIC-PLUS-2 V1
BASIC-PLUS-2/RMS-11K V1
COBOL-11 V3
CTS11/RSTS/E V1.1
CTS-500 V3
CTS-500-2780 V3
DATATRIEVE-11 V1
DECAL V2
DECnet/E V1
DIBOL-11/DECFORM V1, V4
DMS-500 V2
FORTRAN IV/RSTS-E V2
WISE V1
PLOT11-RSTS/E V1.1
RMS-11K V1.5
RPG II V8.02
RSTS/E V6C
RSTS-E/2780 V3
SORT-11 V2
VT55 BASIC-PLUS-2 V1

DISTRIBUTION

The Dispatch is directed to one software contact for each licensed Category A and B software product for one year after installation. No mailing will be made to addresses without a software contact name. Address changes and requests for information about maintenance service after the first year should be sent to the nearest DIGITAL Field Office. For address changes, include the new address and mailing label from the most recently received publication.

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Eleanor F.Hunter, Editor
Roxanne Alexander, Associate Editor

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LAB-8
MASSBUS
UNIBUS
OMNIBUS
OS/8
PDP
PHA
RSTS
RSX
TYPESET-8
TYPESET-11

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USER LETTER
Jan Fair, SPR Administration

Customers (and others) have brought to our attention the need for additional information regarding SPR service, particularly as it involves SPR Administration. The following represents our attempt to fulfill this need. Your comments and suggestions are most welcome.

HOW TO MAKE THE BEST USE OF SPR FORM

What WE Can Do for YOU

1. Blank SPR forms are available upon request in the desired quantities through SPR Administration (P.O.Box F) and your local office/SPR Center.

2. Copies of the SPR acknowledgment and answer are sent to the appropriate DIGITAL Office/SPR Center for their information.

3. SPRs marked *SOFTWARE ERROR or INQUIRY* will have a response for supported Category A and B products. These SPRs should refer to suspected deficiencies in the software.

4. SPRs marked *FYI or SUGGESTION* are forwarded to the pertinent software group for information purposes, and are responded to at their discretion.

5. SPRs marked *DOCUMENTATION ERROR* should report those problems dealing with software manuals or newsletters, and will be forwarded to the pertinent software group.

What YOU Can Do For US

1. Customer Name and Address and Problem Statement should always be typed or printed clearly.

2. SPRs should not be used for problems concerning software policy, software distribution, or hardware. Your local office should be contacted in these cases.

3. It would be most helpful to all concerned, if problems with patches are reported as soon as possible.

4. For security SPRs, it is imperative that the *DO NOT PUBLISH box* be marked.

5. It would be helpful if tapes submitted with SPRs are labeled (track and density), and have a directory attached.

6. Should you ever receive an unacceptable SPR response, please contact us or the appropriate SPR Center so that the response may be readdressed.

7.2 Commonly Used System Programs (CUSPs) Patch Levels

This report reflects the current Version/Edit level of all of the Commonly Used System Programs (CUSPs) supplied as part of the standard RSTS/E V06C-03 System Library Programs release.

System Utilities Package

BUILD	V06C-03	DIRECT	V06C-03ABCD	DISPLY	V06C-03A	VT05	V06C-03
VT50	V06C-03	DSKINT	V06C-03	GRIPE	V06C-03	INIT	V06C-03A
INUSE	V06C-03	LOGIN	V06C-03	LOGOUT	V06C-03A	MONEY	V06C-03
ODT	V06C-03A	PLEASE	V06C-03	PRIOR	V06C-03	QUOLST	V06C-03
REACT	V06C-03	REORDR	V06C-03	SHUTUP	V06C-03	SWITCH	V06C-03
SYSCAT	V06C-03	SYSTAT	V06C-03AB	TALK	V06C-03	TTYSET	V06C-03
UMOUNT	V06C-03ABC	UTILTY	V06C-03	UTILT1	V06C-03AB		

Data Manipulation Package

BPCREF	V06C-03A	BPCRF1	V06C-03	COPY	V06C-03	EDIT	V06C-03A
EDITCH	V06C-03A	FILCOM	V06C-03A	FLINT	V06C-03ABC	FLX	V06C-03A
MAKRTS	V06C-03	PIPSML	V06C-03	PIPEXT	V06C-03AB	PMDUMP	V06C-03A
RUNOFF	V06C-03AB						

Error Control Package

ANALY1	V06C-03	ANALYS	V06C-03	ERRBLD	V06C-03	ERRCPY	V06C-03
ERRDET	V06C-03A	ERRDIS	V06C-03	ERRINT	V06C-03		

Backup Package

BACCOM	V06C-03AB	BACCON	V06C-03AB	BACDEL	V06C-03	BACDIR	V06C-03AB
BACDMP	V06C-03	BACDSK	V06C-03A	BACENT	V06C-03A	BACFRM	V06C-03ABCDE
BACLAB	V06C-03	BACLOD	V06C-03A	BACLST	V06C-03	BACMNT	V06C-03ABCDE
BACPRM	V06C-03	BACKTO	V06C-03AB	BACKUP	V06C-03ABC		

Spooling and Operator Services Package

OPSER	V06C-03	OPSRUN	V06C-03AB				
QUE	V06C-03ABCDEFG	QUEMAN	V06C-03	QUMRUN	V06C-03AB		
CHARS	V06C-03	SPOOL	V06C-03	SPLIDL	V06C-03	SPLRUN	V06C-03A
BATDCD	V06C-03	BATCH	V06C-03	BATIDL	V06C-03A		
BATDEC	V06C-03ABCDEFG	BATRUN	V06C-03ABCD				

User Environment Test Package

UETP	V06C-03A	ACCTST	V06C-03A	AC0TST	V06C-03A	AC1TST	V06C-03A
AC2TST	V06C-03A	AC3TST	V06C-03A	AC4TST	V06C-03A	AC5TST	V06C-03A
DBEXER	V06C-03	DPEXER	V06C-03	DREXER	V06C-03	DMEXER	V06C-03
DSEXER	V06C-03	DFEXER	V06C-03	DKEXER	V06C-03	DXEXER	V06C-03
MTEXER	V06C-03	DTEXER	V06C-03	CPEXER	V06C-03	CREXER	V06C-03
PPEXER	V06C-03	PREXER	V06C-03	KBEXER	V06C-03	LPEXER	V06C-03
SCRIPT	V06C-03	SCRPTB	V06C-03	CVTSCP	V06C-03	OPTPRM	V06C-03
OPTPRK	V06C-03	OPTPRB	V06C-03	TDLSRT	V06C-03	TDLXQK	V06C-03
TDLMQK	V06C-03	TDLOQK	V06C-03	TDLSQK	V06C-03A	CRFILE	V06C-03A
TAPSRT	V06C-03	TAPSRU	V06C-03	DECMRG	V06C-03A	VERIFY	V06C-03
RANMAK	V06C-03	JSTATS	V06C-03	DSTATS	V06C-03	CPUTST	V06C-03
FILMIN	V06C-03	CRUDAT	V06C-03	FLOPPY	V06C-03A	CRDATA	V06C-03A
BUILDR	V06C-03A	PKBSNE	V06C-03				

Automated Patching Facility Package

AUTOED	V06C-03	CPATCH	V06C-03	PATCPY	V06C-03	PBUILD	V06C-03ABC

DECnet/E Utilities

NCROOT	V06C-03A	NETFNC	V06C-03	NCP	V06C-03A	NCU	V06C-03AB
NIP	V06C-03	LSN	V06C-03	TLK	V06C-03A		

4.Ø Notebook Maintenance

Each month you should take apart the Software Dispatch and file the new articles by sequence number in your notebook. If an article is a replacement, discard the superseded article. Each article addresses a single topic and its title gives the symptom or a one-line problem description. This information appears at the top of each page. For example:

RSTS/E Software Dispatch, April 1978

RSTS/E VØ6C-Ø3 Seq 1Ø.12.3 O
System Utilities Package
LOGIN Page 1 of 2

LOGIN CAN PRINT A MESSAGE FOR SPECIFIC ACCOUNTS - OPTIONAL LOGIN PATCH

The System COMPONENTS.SUBCOMPONENTS are listed in Section 4.1. Articles for each subcomponent are assigned a sequence number which uniquely identifies the article within that component category. As each new article is published for a sub-component, it is assigned the next higher sequence number. The sequence numbers are defined as COMPONENT.SUBCOMPONENT.ISSUE number. An example is the 1Ø.12.3 shown in the upper right corner of the sample heading. Replacement articles are noted as such.

Articles for subordinate software that is not unique to RSTS/E are to be filed by product and then component. Articles are sequenced by component after this sorting process. In some cases, there are so few articles that they are sequenced only by product. Missing sequence numbers indicate problems which only apply to other operating systems. The cumulative index is published in the Dispatch to help you maintain the notebook for the complete RSTS/E system.

A flag will appear after the sequence number:

M = Mandatory patch
O = Optional patch (as in the sample heading)
R = Restriction
N = Note

4.1 RSTS/E COMPONENT.SUB-COMPONENT Assignments

The COMPONENT.SUB-COMPONENT numbers outlined below appear on articles to be filed in Section 7.0 of this notebook.

RSTS/E MONITOR

1.0 Initialization
- 1.1 INIT.SYS Program Patches
- 1.2 INIT.SYS Program Notes

2.0 System Generation
- 2.1 SYSGEN Patches
- 2.2 SYSGEN Notes

3.0 Executive
- 3.1 Monitor Patches
- 3.2 Monitor Notes
- 3.3 Terminal Service Patches
- 3.4 Terminal Service Notes
- 3.5 File Processor Patches
- 3.6 File Processor Notes
- 3.7 Device Driver Patches
- 3.8 Device Driver Notes

4.0 BASIC-PLUS
- 4.1 BASIC-PLUS Patches
- 4.2 BASIC-PLUS Notes
- 4.3 Programming Hints
- 4.4 Math Packages
- 4.5 Matrix Functions
- 4.6 PRINT-USING
- 4.7 Record I/O
- 4.8 Virtual Core
- 4.9 String Arithmetic

5.0 RSTS/E 2780 Device Driver
- 5.1 2780 Device Driver Patches
- 5.2 2780 Device Driver Notes

6.0 DECnet/E Package
- 6.1 DECnet/E Patches
- 6.2 DECnet/E Package Notes

7.0 (Reserved)

8.0 (Reserved)

9.0 (Reserved)

RSTS/E UTILITIES

10.0 System Utilities Package

10.1 Package Notes
10.2 BUILD Utility
10.3 DIRECT
10.4 DISPLY
10.5 VT05 Adaptation of DISPLY
10.6 VT50 Adaptation of DISPLY
10.7 (Reserved)
10.8 DSKINT
10.9 GRIPE
10.10 INIT
10.11 INUSE
10.12 LOGIN
10.13 LOGOUT
10.14 MONEY
10.15 ODT
10.16 PLEASE
10.17 PRIOR
10.18 QUOLST
10.19 REACT
10.20 REORDR
10.21 SHUTUP
10.22 SYSCAT
10.23 SYSTAT
10.24 TALK
10.25 TTYSET
10.26 UMOUNT
10.27 UTILTY
10.28 UTILT1
10.29 SWITCH
10.30 VT55
10.31 DEMO55

11.0 Data Manipulation Package

11.1 Package Notes
11.2 COPY
11.3 EDIT
11.4 EDITCH
11.5 FILCOM
11.6 FLINT
11.7 PIPSML
11.8 PIPEXT
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11.11 BPCRF1
11.12 PMDUMP
11.13 FLX
11.14 MAKRTS

12.0 Error Control Package
- 12.1 Package Notes
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- 12.3 ANALYS
- 12.4 ERRCPY
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13.0 Backup Package
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- 13.4 BACDEL
- 13.5 BACDIR
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- 13.7 BACDSK
- 13.8 BACENT
- 13.9 BACFRM
- 13.10 BACLAB
- 13.11 BACLOD
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- 13.13 BACMNT
- 13.14 BACPRM
- 13.15 BACKTO
- 13.16 BACKUP

14.0 Spooling and Operator Services Package
- 14.1 Package Notes
- 14.2 OPSER
- 14.3 OPSRUN
- 14.4 QUE
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- 14.11 BATDCD
- 14.12 BATCH
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- 14.15 BATRUN

15.0 User Environment Test Package
- 15.1 Package Notes
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- 15.5 AC1TST
- 15.6 AC2TST
- 15.7 AC3TST
- 15.8 AC4TST
- 15.9 AC5TST
- 15.10 (Reserved)
- 15.11 DBEXER
- 15.12 DPEXER
- 15.13 DREXER
- 15.14 DMEXER

15.15 DSEXER
15.16 DFEXER
15.17 DKEXER
15.18 DXEXER
15.19 MTEXER
15.20 DTEXER
15.21 CPEXER
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15.23 PPEXER
15.24 PREXER
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15.27 SCRIPT
15.28 SCRPTB
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15.30 OPTPRM
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15.43 VERIFY
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15.52 BUILDR
15.53 PKBSNE
15.54 Script files

16.0 System Management Guidelines

17.0 Automated Patching Facility Package
17.1 Package Notes
17.2 PATCPY
17.3 PBUILD
17.4 CPATCH
17.5 AUTOED
17.6 ONLPAT.SAV

18.0 (Reserved)

RSTS/E DOCUMENTATION

19.Ø Documentation

19.1	Documentation Directory	DEC-11-ORDAA-B-D
19.2	RSTS/E System Generation Manual	AA-2669C-TC
19.3	RSTS/E System Manager's Guide	DEC-11-ORSMD-B-D(+DN1)
19.4	RSTS/E System User's Guide	DEC-11-ORSUB-A-D(+DN1)
19.5	BASIC-PLUS Language Manual	DEC-11-ORBPB-B-D
19.6	RSTS/E Programming Manual	DEC-11-ORPMA-B-D(+DN1)
19.7	RSTS/E RUNOFF User's Guide	DEC-11-URUNA-B-D
19.8	RSTS/E Text Editor Manual	DEC-11-UTEMA-A-D
19.9	RSTS/E VØ6C-Ø3 Release Notes	AA-5246B-TC
19.1Ø	RSTS/E Pocket Guide	DEC-11-ORFCA-A-D
19.11	(Reserved)	
19.12	RSTS/E User Environment Test Package	AA-57Ø4A-TC
19.13	RSTS/E Task Builder Reference Manual	AA-5Ø72A-TC
19.14	Introduction to RMS-11	AA-ØØØ1A-TC
19.15	RMS-11 MACRO Programmer's Reference Manual	AA-ØØØ2A-TC
19.16	RSTS/E RMS-11 Utilities User's Guide	AA-ØØØ3B-TC
19.17	DEC Editor Reference Manual	AA-5789A-TC
19.18	PDP-11 MACRO-11 Language Reference Manual	AA-5Ø75A-TC
19.19	RSTS/E DECnet/E System Manager's Guide	AA-5666A-TC
19.2Ø	RSTS/E DECnet/E User's Guide	AA-5667A-TC
19.21	RSTS/E DECnet/E Release Notes	AA-D426A-TC

RUN-TIME SYSTEMS SUPPORT

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- 21.1 Package Notes
- 21.2 (Reserved)
- 21.3 RSX.RTS
- 21.4 TKB.TSK
- 21.5 MAC.TSK
- 21.6 LBR.TSK
- 21.7 SYSLIB.OLB
- 21.8 RSXMAC.SML
- 21.9 PAT.TSK
- 21.10 EDT.TSK

22.0 RT-11 Emulator Package
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- 22.2 RT11.RTS
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- 22.4 EDIT.SAV
- 22.5 HOOK.SAV
- 22.6 LIBR.SAV
- 22.7 LINK.SAV
- 22.8 LOGIN.SAV
- 22.9 LOGOUT.SAV
- 22.10 MACRO.SAV
- 22.11 PAT.SAV
- 22.12 PATCH.SAV
- 22.13 PIP.SAV
- 22.14 SILUS.SAV
- 22.15 SYSBAT.SAV
- 22.16 SYSGEN.SAV
- 22.17 UTILTY.SAV

4.2 Subordinate Software

23.0 FORTRAN IV/RSTS-E V02
- 23.1 Package Notes
- 23.2 COMPILER
- 23.3 OTS
- 23.4 RUNTIME SYSTEM

24.0 DMS-500 V02
- 24.1 Package Notes
- 24.2 DMSUTL
- 24.3 DMSFSS
- 24.4 DMSISR
- 24.5 DMSISC
- 24.6 DMSRAR
- 24.7 DMSISA
- 24.8 DMSRAA
- 24.9 DMSFSU
- 24.10 DMSISO
- 24.11 DMSRAO
- 24.12 DMSFSX
- 24.13 IAMGEN
- 24.14 IAMCRI
- 24.15 IAMDMP
- 24.16 IAMVFY
- 24.17 IAMPRI
- 24.18 IAMFNS
- 24.19 DSORT
- 24.20 DSORTD
- 24.21 DSORTF
- 24.22 DSORTX
- 24.23 DSORTS
- 24.24 DSORTM
- 24.25 DSORTO
- 24.26 DMS-500 User's Guide (DEC-11-ORDUA-B-D)

25.0 RSTS/E 2780 PACKAGE
- 25.1 Package Notes
- 25.2 RJ2780
- 25.3 RSTS/E 2780 User's Guide (DEC-11-ORJEA-B-D)

26.0 DIBOL-11/DECFORM V3C
- 26.1 Package Notes
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- 27.2 BASIC2 Compiler Patches
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- 27.4 BP2COM Run-Time System Patches
- 27.5 BASIC2 Object Library Patches
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- 27.7 BASRMS Object Library Patches

27.8 TRANSLATOR Utility
27.9 BASIC-PLUS-2 Language Manual (AA-Ø153A-TK)
27.1Ø BASIC-PLUS-2 RSTS/E User's Guide (AA-Ø154A-TC)
27.11 BASIC-PLUS-2 RSTS/E Installation Guide (AA-Ø156A-TC)

28.Ø COBOL V3.Ø
28.1 Package Notes
28.2 COBOL Compiler
28.3 COBOL Object Library
28.4 COBOL ODL
28.5 COBOL Utilities
28.6 PDP-11 COBOL Language Reference Manual (AA-1749D-TC)
28.7 PDP-11 COBOL User's Guide (AA-1757C-TC)
28.8 PDP-11 COBOL Installation Guide (AA-1745C-TC)

29.Ø RMS-11 V1.5
29.1 Package Notes
29.2 RMS11.RTS
29.3 RMS11.ODL
29.4 RMSLIB.OLB
29.5 RMSMAC.MLB
29.6 RMSUTL.OLB
29.7 RSTS/E RMS-11K Installation Guide (AA-5185B-TC)
29.8 (Reserved)
29.9 (Reserved)
29.1Ø RMS-11K V1.5
29.11 RMS-11K Package Notes
29.12 RMS11.RTS
29.13 RMS11.ODL
29.14 RMSLIB.OLB
29.15 RMSMAC.MLB
29.16 RMSUTL.OLB

3Ø.Ø SORT-11 VØ2
3Ø.1 Package Notes
3Ø.2 SORT Utility
3Ø.3 PDP-11 SORT Reference Manual (AA-3341C-TC)

31.Ø DECnet/E V1.Ø Utilities
31.1 Package Notes
31.2 NCP
31.3 NCU
31.4 TLK
31.5 LSN
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31.8 NCROOT
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32.Ø RPG II V8.Ø2
32.1 Package Notes
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32.4 RPGFNS
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32.7 RPGDMP
32.8 RPGESP

32.9 RPGFCV
32.10 RPGPCV
32.11 RPG II Report Program Generator Language Manual (AA-5371A-TC)
32.12 RPG II Report Program Generator User's Guide (AA-C866A-TC)

33.0 APL-11
33.1 Package Notes
33.2 Run-Time System Patches
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34.0 DATATRIEVE-11 V1
34.1 Package Notes

35.0 WISE V1
35.1 Package Notes
35.2 UPDATE
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36.0 DIBOL-11/DECFORM V4D
36.1 Package Notes
36.2 CTSPIP
36.3 Build Procedures
36.4 DICOMP
36.5 DIBOLR
36.6 DECFORM
36.7 RMS Notes
36.8 DIBOL-11 Language Reference Manual (AA-1760D-TC)
36.9 CTS-500 DIBOL User's Guide (AA-5205B-TC)
36.10 DECFORM User's Guide (AA-5792C-TC)

37.0 DECAL V2
37.1 Package Notes
37.2 QUIZ
37.3 CREATE

38.0 BASIC-PLUS-2 V1.5
38.1 Package Notes
38.2 BASIC2 Compiler Patches
38.3 BASIC2 Run-Time System Patches
38.4 BP2COM Run-Time System Patches
38.5 BASIC2 Object Library Patches
38.6 BP2COM Object Library Patches
38.7 BASRMS Object Library Patches
38.8 TRANSLATOR Utility
38.9 PDP-11 BASIC-PLUS-2 Language Reference Manual (AA-H074A-TC)
38.10 BASIC-PLUS-2 RSTS/E User's Guide (AA-0154B-TC)
38.11 BASIC-PLUS-2 RSTS/E Installation Guide (AA-0156B-TC)

39.Ø DIBOL-11/DECFORM V4C
- 39.1 Package Notes
- 39.2 CTSPIP
- 39.3 Build Procedures
- 39.4 DICOMP
- 39.5 DIBOL
- 39.6 DECFORM
- 39.7 ISMUTL
- 39.8 SORT
- 39.9 DIBOL-11 Language Reference Manual (AA-176ØD-TC)
- 39.1Ø CTS-5ØØ DIBOL User's Guide (AA-52Ø5B-TC)
- 39.11 DECFORM User's Guide (AA-5792C-TC)

4Ø.Ø COBOL V3.1
- 4Ø.1 Package Notes
- 4Ø.2 COBOL Compiler
- 4Ø.3 COBOL Object Library
- 4Ø.4 COBOL ODL
- 4Ø.5 COBOL Utilities
- 4Ø.6 PDP-11 COBOL Language Reference Manual (AA-1749D-TC)
- 4Ø.7 PDP-11 COBOL User's Guide (AA-1757C-TC)
- 4Ø.8 PDP-11 COBOL Installation Guide (AA-1745C-TC)

RSTS/E VØ6C-Ø3
RSTS/E INIT.SYS Program
INIT.SYS Program Patches

NOT ENOUGH ROOM IN COPY - MANDATORY INIT.SYS PATCH

PROBLEM:

When copying to a fairly full system disk and using the "D" option to override the current copy on the system disk, the current version of the file may be deleted and no new version written due to lack of free space.

SOLUTION:

This patch will make sure that there is enough free disk space to create the new copy of a file before it deletes the old copy.

PROCEDURE:

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the patched INIT.SYS will propagate the fix.

2. The patch described in Steps 5 and 6 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? INIT.SYS
   ```

3. The patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>     (RETURN for manual patch installation)
   File to patch? INIT.SYS
   File found in account [Ø,1]
   ```

   The patch is also contained in a command file ($INIT.CMD) appearing in patch kit version "E" or later.

4. Install the patch in step 5 if you have V6C-Ø3 distribution.

   Install the patch in step 6 if you have V6C-Ø4 (RLØ1/RKØ7) distribution. The VØ6C-Ø4 distribution was an SDC update to provide RLØ1 and RKØ7 support, and is available only on these media.

5. The patch for V6C-Ø3 is as follows:

```
File to patch? INIT.SYS
Base address? 124716
Offset address? Ø
 Base   Offset  Old       New?
124716  ØØØØØØ  ØØ4767  ? 137
124716  ØØØØØ2  ØØ2162  ? 143366
124716  ØØØØØ4  ØØ4737  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? 143366
Offset address? Ø
 Base   Offset  Old       New?
143366  ØØØØØØ  ØØØØØØ  ? 4737
143366  ØØØØØ2  ØØØØØØ  ? 35Ø22
143366  ØØØØØ4  ØØØØØØ  ? 13Ø2
143366  ØØØØØ6  ØØØØØØ  ? 43Ø2
143366  ØØØØ1Ø  ØØØØØØ  ? 13Ø1
143366  ØØØØ12  ØØØØØØ  ? 4354 2
143366  ØØØØ14  ØØØØØØ  ? 5ØØ3
143366  ØØØØ16  ØØØØØØ  ? 4737
143366  ØØØØ2Ø  ØØØØØØ  ? 47654
143366  ØØØØ22  ØØØØØØ  ? 1Ø34Ø2
143366  ØØØØ24  ØØØØØØ  ? 137
143366  ØØØØ26  ØØØØØØ  ? 124730
143366  ØØØØ3Ø  ØØØØØØ  ? 13701
143366  ØØØØ32  ØØØØØØ  ? 135424
143366  ØØØØ34  ØØØØØØ  ? 5ØØØ
143366  ØØØØ36  ØØØØØØ  ? 4737
143366  ØØØØ4Ø  ØØØØØØ  ? 47524
143366  ØØØØ42  ØØØØØØ  ? 13Ø4Ø2
143366  ØØØØ44  ØØØØØØ  ? 137
143366  ØØØØ46  ØØØØØØ  ? 124766
143366  ØØØØ5Ø  ØØØØØØ  ? 4737
143366  ØØØØ52  ØØØØØØ  ? 35Ø4Ø
143366  ØØØØ54  ØØØØØØ  ? 4737
143366  ØØØØ56  ØØØØØØ  ? 127104
143366  ØØØØ6Ø  ØØØØØØ  ? 137
143366  ØØØØ62  ØØØØØØ  ? 124722
143366  ØØØØ64  ØØØØØØ  ? ^C          (CTRL/C to exit;up-arrow/C for ONLPAT)
```

6. The patch for V6C-04 is as follows:

```
File to patch? INIT.SYS
Base address? 127720
Offset address? 0
 Base   Offset  Old       New?
127720  000000  004767  ? 137
127720  000002  002162  ? 125610
127720  000004  004737  ? ^Z            (CTRL/Z for new offset)
Offset address? ^Z                      (CTRL/Z for new base)
Base address? 125610
Offset address? 0
 Base   Offset  Old       New?
125610  000000  000000  ? 4737
125610  000002  000000  ? 36262
125610  000004  000000  ? 13702
125610  000006  000000  ? 45112
125610  000010  000000  ? 13701
125610  000012  000000  ? 45052
125610  000014  000000  ? 5003
125610  000016  000000  ? 4737
125610  000020  000000  ? 51164
125610  000022  000000  ? 103402
125610  000024  000000  ? 137
125610  000026  000000  ? 127732
125610  000030  000000  ? 13701
125610  000032  000000  ? 141026
125610  000034  000000  ? 5000
125610  000036  000000  ? 4737
125610  000040  000000  ? 51034
125610  000042  000000  ? 130402
125610  000044  000000  ? 137
125610  000046  000000  ? 127770
125610  000050  000000  ? 4737
125610  000052  000000  ? 36300
125610  000054  000000  ? 4737
125610  000056  000000  ? 132106
125610  000060  000000  ? 137
125610  000062  000000  ? 127724
125610  000064  000000  ? ^C            (CTRL/C to exit;up-arrow/C for ONLPAT)
```

RSTS/E VØ6C-Ø3
RSTS/E INIT.SYS Program
INIT.SYS Program Patches

PATTERN CHECKS FAIL ON DR DISKS - MANDATORY INIT.SYS PATCH

PROBLEM:

When initializing a disk pack on a drive called "DR" (RMØ2 or RMØ3), INIT.SYS ignores any errors that may occur. Thus, pattern checks on these disks are ineffective.

SOLUTION:

This patch fixes INIT.SYS's DR disk driver to correctly recognize errors.

PROCEDURE:

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the patched INIT.SYS will propagate the fix.

2. The patch described in Steps 5 and 6 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? INIT.SYS
   ```

3. The patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>      (RETURN for manual patch installation)
   File to patch? INIT.SYS
   File found in account [Ø,1]
   ```

   The patch is also contained in a command file ($INIT.CMD) appearing in patch kit version "E" or later.

4. Install the patch in step 5 if you have V6C-Ø3 distribution.

   Install the patch in step 6 if you have V6C-Ø4 (RLØ1/RKØ7) distribution. The VØ6C-Ø4 distribution was an SDC update to provide RLØ1 and RKØ7 support and is available only on those media.

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INIT.SYS Program Patches Page 2 of 2

5. The patch for V6C-Ø3 is as follows:

```
File to patch? INIT.SYS
Base address? 6ØØ4
Offset address? 244
 Base    Offset  Old        New?
ØØ6ØØ4  ØØØ244  Ø16ØØ3   ? 24Ø
ØØ6ØØ4  ØØØ246  Ø72662   ? 24Ø
ØØ6ØØ4  ØØØ25Ø  Ø12ØØØ   ? ^C          (CTRL/C to exit;up-arrow/C for ONLPAT)
```

6. The patch for V6C-Ø4 is as follows:

```
File to patch? INIT.SYS
Base address? 7144
Offset address? 244
 Base    Offset  Old        New?
ØØ7144  ØØØ244  Ø16ØØ3   ? 24Ø
ØØ7144  ØØØ246  Ø73542   ? 24Ø
ØØ7144  ØØØ25Ø  Ø12ØØØ   ? ^C          (CTRL/C to exit;up-arrow/C for ONLPAT)
```

RSTS/E VØ6C-Ø3
RSTS/E Executive
Terminal Service Patches

Seq 3.3.8 M
Page 1 of 2

********** Supersedes Article April, 1978 **********

NOTE
The previous version of this patch could not be installed with ONLPAT if the monitor SIL being patched was the currently-installed SIL.

DISABLING A KEYBOARD CRASHES SYSTEM - MANDATORY TERMINAL SERVICE PATCH

PROBLEM:

The UTILTY command "DISABLE KBn" will crash the system.

SOLUTION:

This required Terminal Service patch fixes the problem.

PROCEDURE:

1. This is a required patch to the RSTS/E VØ6C-Ø3 executive. It must be installed in all target monitor SILs.

2. The patch described in Step 4 below can be installed using the PATCH option after bootstrapping your system disk:

   ```
   Option: PATCH
   File to patch? <lf>          (LINE FEED for installed monitor SIL)
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>      (RETURN for manual patch installation)
   File to patch? <lf>          (LINE FEED for installed monitor SIL)
   File found in account [Ø,1]
   ```

   For automated patching, the patch is contained in a command file ($MONITR.CMD) appearing in patch kit version "D" or later.

4. The patch is as follows:

```
Option: PATCH
File to patch? <lf>      (LINE FEED for installed monitor SIL)
Module name? OVR
Base address? RAD0ST
Offset address? 536
 Base    Offset  Old     New?
016000  000536  016705  ? 13705
016000  000540  ??????  ? $UUOTB+40
016000  000542  162705  ? 4767
016000  000544  000002  ? 124
016000  000546  000137  ? ^Z            (CTRL/Z for new offset)
Offset address? 672
 Base    Offset  Old     New?
016000  000672  000000  ? 42705
016000  000674  000000  ? 1
016000  000676  000000  ? 162705
016000  000700  000000  ? 2
016000  000702  000000  ? 207
016000  000704  ??????  ? ^C            (CTRL/C to exit)

Option:
```

5. If the above patch was installed using ONLPAT, it will take effect the next time the system is bootstrapped.

RSTS/E VØ6C-Ø3
Backup Package
Package Notes

Seq 13.1.2 N

SYSTEM BACKUP SHOULD BE DONE REGULARLY

Digital software specialists have been reporting that users are not performing frequent and/or complete backup of their systems. This can prove to be disastrous! Disk hardware problems, environmental conditions, or even brief power aberrations can, and do, cause disk packs to become completely useless. You should perform regular and complete backups in order to be able to restore your system to that point which your business needs demand.

RSTS/E VØ6C-Ø3
Backup Package
BACCOM

Seq 13.2.2 M

PROBLEM WITH LARGE DISK BACKUP VOLUMES - MANDATORY BACCOM PATCH

PROBLEM:

Backup may fail to successfully compare a file during a BACKUP to a disk volume which has more than 32767 device clusters. This is due to the fact that the BACCOM program incorrectly interprets bad cluster numbers greater than 32767 as negative numbers.

SOLUTION:

The patching procedure detailed below will correct the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BACCOM.BAS=BACCOM.BAS<cr>
#[logfile=]<cr>
*H/EDIT/V<cr>
        !       EDIT            : Ø3A
*G/Ø3A/I/B/V<cr>
        !       EDIT            : Ø3AB
*AV<cr>
        !       EDIT DATE       : Ø2-FEB-78
*G/Ø2-FEB-78/-9C/Ø4-SEP-78/V<cr>
        !       EDIT DATE       : Ø4-SEP-78
```

```
*H/20/G/REASON/V<cr>
  !     VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-03AB<tab><tab>04-SEP-78<tab>FIX TO BAD BLOCK HANDLING PROBLEM<lf>
  !<tab><tab><tab><tab><tab>DUE TO DCN'S > 32767.<esc>*V<cr>
  !                                       DUE TO DCN'S > 32767.
*H/1010<tab>/V<cr>
1010     I$="BACCOM       V06C-03A"
*G/03A/I/B/V<cr>
1010     I$="BACCOM       V06C-03AB"
*H/11040<tab>/V<cr>
11040    C%=C%+1%
*AV<cr>
         \ IF (B3%<>0%) AND (C%>=C7%) THEN
*G/C%/-2C/FNN(C%)/V<cr>
         \ IF (B3%<>0%) AND (FNN(C%)>=C7%) THEN
*G/C7%/-3C/FNN(C7%)/V<cr>
         \ IF (B3%<>0%) AND (FNN(C%)>=FNN(C7%)) THEN
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BACCOM<cr>

Ready

COMPILE $BACCOM<cr>

Ready

RUN $PIP<cr>
*=$BACCOM.BAC<232>/RE<cr>
*^Z

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3
Backup Package
BACDSK

Seq 13.7.1 M

INCORRECT COMPUTATION OF BACKUP VOLUME BAD CLUSTERS - MANDATORY BACDSK PATCH

PROBLEM:

The BACDSK program is incorrectly deriving the device cluster numbers (DCN's) of all device clusters within a bad backup cluster when dealing with DCN's > 32767. Therefore, on each successive BACKUP to an unreinitialized disk which has more than 32767 device clusters, BACDSK is erroneously deriving more and more bad clusters. If this process is allowed to continue for very many BACKUP's, the processing time for BACDSK's initialization will become lengthy and finally, when the number of bad blocks reaches BACKUP's limit, the package will no longer use the disk.

SOLUTION:

The patching procedure detailed below will correct the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BACDSK.BAS=BACDSK.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : Ø3
*G/Ø3/I/A/V<cr>
6!              EDIT            : Ø3A
*H/7!/V<cr>
7!              EDIT DATE       : 3Ø-NOV-77
*G/3Ø-NOV-77/-9C/Ø1-SEP-78/V<cr>
7!              EDIT DATE       : Ø1-SEP-78
```

```
*H/2Ø/G/REASON/V<cr>
!       VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
!<tab>6C-Ø3A<tab><tab>Ø1-SEP-78<tab>FIX TO COMPUTATION OF BACKUP VOLUME<lf>
!<tab><tab><tab><tab><tab>BAD BLOCKS.<esc>*V<cr>
!                                       BAD BLOCKS.
*H/1Ø1Ø<tab>/V<cr>
1Ø1Ø     I$="VØ6C-Ø3"
*G/Ø3/I/A/V<cr>
1Ø1Ø     I$="VØ6C-Ø3A"
*H/1ØØ7Ø<tab>/V<cr>
1ØØ7Ø    D7%=F9%/C1%
*2AV<cr>
        \       T=FNF(((FNI%(S(I%))-1%)/D7%)*D7%)
*G/((FNI%(S(I%))/-13C/FNI%((S(I%)/V<cr>
        \       T=FNF(FNI%((S(I%)-1%)/D7%)*D7%)
*2AV<cr>
        \               T=T+1%
*G/1%/I/ UNLESS T=M/V<cr>
        \               T=T+1% UNLESS T=M
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BACDSK<cr>

Ready

COMPILE $BACDSK<cr>

Ready

RUN $PIP<cr>
*=$BACDSK.BAC<232>/RE<cr>
*^Z

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3
Backup Package
BACFRM

Seq 13.9.5 M

PROBLEM WITH LARGE DISK BACKUP VOLUMES - MANDATORY BACFRM PATCH

PROBLEM:

Backup may fail to successfully RESTORE a file from a disk backup volume which has more than 32767 device clusters. This is due to the fact that the BACFRM program incorrectly interprets bad cluster numbers greater than 32767 as negative numbers.

SOLUTION:

The patching procedure detailed below will correct the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BACFRM.BAS=BACFRM.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : Ø3ABCD
*G/Ø3ABCD/I/E/V<cr>
6!              EDIT            : Ø3ABCDE
*H/7!/V<cr>
7!              EDIT DATE       : 16-MAY-78
*G/16-MAY-78/-9C/Ø4-SEP-78/V<cr>
7!              EDIT DATE       : Ø4-SEP-78
```

```
*H/20/G/REASON/V<cr>
  !     VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-03ABCDE<tab>04-SEP-78<tab>FIX TO BAD BLOCK HANDLING PROBLEM<lf>
  !<tab><tab><tab><tab><tab>DUE TO DCN'S > 32767.<esc>*V<cr>
  !                                       DUE TO DCN'S > 32767.
*H/1010<tab>/V<cr>
1010    I$="BACFRM      V06C-03ABCD"
*G/03ABCD/I/E/V<cr>
1010    I$="BACFRM      V06C-03ABCDE"
*H/10250<tab>/V<cr>
10250   C%=C%+1%
*AV<cr>
        \ IF (B3%<>0%) AND (C%>=C7%) THEN
*G/C%/-2C/FNN(C%)/V<cr>
        \ IF (B3%<>0%) AND (FNN(C%)>=C7%) THEN
*G/C7%/-3C/FNN(C7%)/V<cr>
        \ IF (B3%<>0%) AND (FNN(C%)>=FNN(C7%)) THEN
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BACFRM<cr>

Ready

COMPILE $BACFRM<cr>

Ready

RUN $PIP<cr>
*=$BACFRM.BAC<232>/RE<cr>
*^Z

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E V06C-03
Backup Package
BACLOD

PROBLEM WITH LARGE DISK BACKUP VOLUMES - MANDATORY BACLOD PATCH

PROBLEM:

Backup may fail to load a valid index file from a disk backup volume which has more than 32767 device clusters. This is due to the fact that the BACLOD program incorrectly interprets bad cluster numbers greater than 32767 as negative numbers.

SOLUTION:

The patching procedure detailed below will correct the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BACLOD.BAS=BACLOD.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : 03
*G/03/I/A/V<cr>
6!              EDIT            : 03A
*H/7!/V<cr>
7!              EDIT DATE       : 30-NOV-77
*G/30-NOV-77/-9C/04-SEP-78/V<cr>
7!              EDIT DATE       : 04-SEP-78
```

RSTS/E V06C-03
Backup Package
BACLOD


```
*H/20/G/REASON/V<cr>
  !     VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-03A<tab><tab>04-SEP-78<tab>FIX TO BAD BLOCK HANDLING PROBLEM<lf>
  !<tab><tab><tab><tab><tab>DUE TO DCN'S > 32767.<esc>*V<cr>
  !                                       DUE TO DCN'S > 32767.
*H/1010<tab>/V<cr>
1010    I$="BACLOD      V06C-03"
*G/03/I/A/V<cr>
1010    I$="BACLOD      V06C-03A"
*H/11020<tab>/V<cr>
11020   C%=C%+1%
*4AV<cr>
                        \ GOTO 11030 IF C%<Z0%(B3%,B4%)
*G/C%/-2C/FNN(C%)/V<cr>
                        \ GOTO 11030 IF FNN(C%)<Z0%(B3%,B4%)
*G/Z0%(B3%,B4%)/-12C/FNN(Z0%(B3%,B4%))/V<cr>
                        \ GOTO 11030 IF FNN(C%)<FNN(Z0%(B3%,B4%))
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BACLOD<cr>

Ready

COMPILE $BACLOD<cr>

Ready

RUN $PIP<cr>
*=$BACLOD.BAC<232>/RE<cr>
*^Z

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3 Seq 14.4.7 M
Spooling and Operator Services Package
QUE Page 1 of 3

INVALID OPERATOR CHECK AND NUMERIC ARGUMENTS OUT OF RANGE - MANDATORY QUE PATCH

PROBLEM:

QUE does not take the keyboard number of the user into consideration when determining if the user is a valid operator.

QUE does not always detect numeric switch arguments which are out of range.

SOLUTION:

The following patch will cause QUE to check keyboard numbers when it checks for a valid operator, and to issue an error message if a numeric switch argument is out of range.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - QUE.BAS=QUE.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : Ø3ABCDEF
*G/Ø3ABCDEF/I/G/V<cr>
6!              EDIT            : Ø3ABCDEFG
*H/7!/V<cr>
7!              EDIT DATE       : 28-APR-78
*G/28-APR-78/-9C/28-AUG-78/V<cr>
7!              EDIT DATE       : 28-AUG-78
```

```
*H/2Ø/V<cr>
2Ø       !
*G/REASON/V<cr>
21!      VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-Ø3ABCDEFG<tab>28-AUG-78<tab>CHECK KB: FOR OPERATORS,<lf>
  !<tab><tab><tab><tab><tab>NUMERIC ARGS IN RANGE.<esc>*V<cr>
  !                                       NUMERIC ARGS IN RANGE.
*H/1ØØØ<tab>/V<cr>
1ØØØ     C$=SYS(CHR$(6%)+CHR$(9%)+CHR$(Ø%))
*4AV<cr>
         \ PRINT "QUE    VØ6C-Ø3ABCDEF   ";C$
*G/Ø3ABCDEF/I/G/V<cr>
         \ PRINT "QUE    VØ6C-Ø3ABCDEFG  ";C$
*H/1Ø2Ø<tab>/V<cr>
1Ø2Ø     Z$=MID(SYS(CHR$(6%)+CHR$(14%)),7%,2%) UNLESS (EØ% AND 16%) <> Ø%
*I<cr>
KB%=ASCII(MID(SYS(CHR$(6%)+CHR$(9%)+CHR$(Ø%)),2%,1%))/2%<lf>
<tab>\ <esc>*V<cr>
         \ Z$=MID(SYS(CHR$(6%)+CHR$(14%)),7%,2%) UNLESS (EØ% AND 16%) <> Ø%
*H/1Ø18Ø<tab>/V<cr>
1Ø18Ø    ON ERROR GOTO 1Ø24Ø%
*3AV<cr>
         \ D$=CHR$(VAL(D$)) IF (D% AND 64%) <> Ø%
*I<cr>
<tab>\ GOTO 1Ø24Ø IF ((VAL(D$)>255% OR VAL(D$)<Ø%) AND (D% AND 64%)) OR<lf>
<tab><tab>(VAL(D$)<Ø% AND (D% AND 128%)) IF D% AND 192%<lf>
<esc>*V<cr>
         \ D$=CHR$(VAL(D$)) IF (D% AND 64%) <> Ø%
*H/1581Ø<tab>/V<cr>
1581Ø    FOR T1% =Ø% TO 15%
*G/GOTO 1585Ø%/V<cr>
         \ IF V%(T1%,Ø%) =Ø% THEN GOTO 1585Ø%
*I<cr>
<lf>
<tab><tab>ELSE<lf>
<tab><tab>IF (V%(T1%,Ø%) AND 255%) <>255% THEN<lf>
<tab><tab>IF (V%(T1%,Ø%) AND 255%) <> KB% THEN GOTO 1585Ø<esc>*V<cr>
                  IF (V%(T1%,Ø%) AND 255%) <> KB% THEN GOTO 1585Ø
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD QUE<cr>

Ready

COMPILE $QUE<cr>

Ready

RUN $PIP<cr>
*=$QUE.BAC<232>/RE<cr>
*^Z

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3
Spooling and Operator Services Package
BATIDL

Seq 14.13.1 M

FATAL ERRORS ARE NOT STORED PROPERLY IN THE WORK FILE - MANDATORY BATIDL PATCH

PROBLEM:

Fatal errors do not get stored properly, thus they are reported incorrectly.

SOLUTION:

The patching procedure detailed below corrects the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BATIDL.BAS=BATIDL.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : Ø3
*G/Ø3/I/A/V<cr>
6!              EDIT            : Ø3A
*H/7!/V<cr>
7!              EDIT DATE       : 3Ø-NOV-77
*G/3Ø-NOV-77/-9C/28-AUG-78/V<cr>
7!              EDIT DATE       : 28-AUG-78
```

```
*H/20/V<cr>
20       !
*G/REASON/V<cr>
21!      VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-03A<tab><tab>28-AUG-78<tab>STORE ERROR INFO.<esc>*V<cr>
  !      6C-03A          28-AUG-78       STORE ERROR INFO.
*H/1010<tab>/V<cr>
1010     I$="V06C-03"
*G/03/I/A/V<cr>
1010     I$="V06C-03A"
*H/9020<tab>/V<cr>
9020     WHILE M%(4%)
*G/=J9%/V<cr>
         \ Z0%(0%,27%)=J9%
*AI<cr>
<tab>\ Z0%(0%,49%)=FATAL.ERR%<lf>
<esc>*V<cr>

*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BATIDL<cr>

Ready

COMPILE $BATIDL<cr>

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3
Spooling and Operator Services Package
BATDEC

Seq 14.14.8 M
Page 1 of 2

FATAL ERRORS ARE NOT STORED PROPERLY IN THE WORK FILE - MANDATORY BATDEC PATCH

PROBLEM:

Fatal errors do not get stored properly, thus they are reported incorrectly.

SOLUTION:

The patching procedure detailed below corrects the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BATDEC.BAS=BATDEC.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : Ø3ABCDEF
*G/Ø3ABCDEF/I/G/V<cr>
6!              EDIT            : Ø3ABCDEFG
*H/7!/V<cr>
7!              EDIT DATE       : 27-JAN-78
*G/27-JAN-78/-9C/28-AUG-78/V<cr>
7!              EDIT DATE       : 28-AUG-78
```

```
*H/20/V<cr>
20       !
*G/REASON/V<cr>
  !      VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-03ABCDEFG<tab>28-AUG-78<tab>STORE ERROR INFO.<esc>*V<cr>
  !      6C-03ABCDEFG     28-AUG-78       STORE ERROR INFO.
*H/1010<tab>/V<cr>
1010     I$="V06C-03ABCDEF"
*G/03ABCDEF/I/G/V<cr>
1010     I$="V06C-03ABCDEFG"
*H/9020<tab>/V<cr>
9020     WHILE M%(4%)
*G/=J9%/V<cr>
         \ Z0%(0%,27%)=J9%
*AI<cr>
<tab>\ Z0%(0%,49%)=FATAL.ERR%<lf>
<esc>*V<cr>

*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BATDEC<cr>

Ready

COMPILE $BATDEC<cr>

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3
Spooling and Operator Services Package
BATRUN

FATAL ERRORS ARE NOT STORED PROPERLY IN THE WORK FILE - MANDATORY BATRUN PATCH

PROBLEM:

Fatal errors do not get stored properly, thus they are reported incorrectly.

SOLUTION:

The patching procedure detailed below corrects the above problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the required program to be patched is located on the public disk structure. In the patching procedure, we will refer to the program by its most simple name format: <program name>.BAS. The person performing the patching operation should, if necessary, replace all program references with suitable text according to the requirements of the installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching operation will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "E" or later. If you do not have this distribution you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - BATRUN.BAS=BATRUN.BAS<cr>
#[logfile=]<cr>
*H/6!/V<cr>
6!              EDIT            : ØABC
*G/ØABC/I/D/V<cr>
6!              EDIT            : ØABCD
*H/7!/V<cr>
7!              EDIT DATE       : 28-MAR-78
*G/28-MAR-78/-9C/28-AUG-78/V<cr>
7!              EDIT DATE       : 28-AUG-78
```

RSTS/E VØ6C-Ø3
Spooling and Operator Services Package
BATRUN


```
*H/2Ø/V<cr>
2Ø       !
*G/REASON/V<cr>
21!      VER/ED          EDIT DATE       REASON
*I<cr>
<lf>
  !<tab>6C-Ø3ABCD<tab>28-AUG-78<tab>STORE ERROR INFO.<esc>*V<cr>
  !      6C-Ø3ABCD        28-AUG-78       STORE ERROR INFO.
*H/1Ø1Ø<tab>/V<cr>
1Ø1Ø     I$="VØ6C-Ø3ABC"
*G/Ø3ABC/I/D/V<cr>
1Ø1Ø     I$="VØ6C-Ø3ABCD"
*H/9Ø2Ø<tab>/V<cr>
9Ø2Ø     WHILE M%(4%)
*G/=J9%/V<cr>
         \ Z0%(Ø%,27%)=J9%
*AI<cr>
<tab>\ Z0%(Ø%,49%)=FATAL.ERR%<lf>
<esc>*V<cr>

*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-compile the program and re-enter it into the system library, type the following RSTS/E commands.

```
OLD BATRUN<cr>

Ready

COMPILE $BATRUN<cr>

Ready
```

4. The person making the changes to the program should now take whatever steps are necessary, according to installation guidelines, to save the new version of the program.

5. The source (.BAS) version of the program should now be removed from the public structure by using either the UNSAVE or the KILL commands of RSTS/E.

RSTS/E VØ6C-Ø3
System Management Guidelines
Using BACKUP on a Two Disk System

USING BACKUP ON A TWO DISK SYSTEM

This article describes the procedure for using the RSTS/E VØ6C BACKUP package to back up the disks on a system which has only two disk drives and no magtape drive. On such a system, you can back up the system disk normally by dismounting the non-system disk. The only requirement is that the BACKUP package exist entirely on the system disk. However, it is impossible to take a normal backup of the non-system disk. Such a procedure would require that the system disk, the disk being backed up, and the backup volume all be mounted simultaneously, and hence would require three or more disk drives.

The solution presented in this article is to place a minimal system on the other disk, allowing it to run as the system disk during the backup. You must follow this procedure for every RSTS/E file structured disk pack, public or private, which you ever mount along with the system disk and which you want to be able to back up. This procedure has one major drawback: the minimal system requires a large number of blocks on the non-system disk (approximately 14ØØ). If you have RKØ5 disks, you should not use this procedure. Instead, use ROLLIN to preserve RKØ5 disks. If you have RLØ1 or RKØ6 disks, carefully consider the consequences of using a large part of your non-system disk capacity (almost 6% for RKØ6, almost 15% for RLØ1) for backup. You may wish to make the dangerous choice of not backing up your non-system disk(s) and thereby risking loss of data from hardware or software failure (see Seq 13.1.2 N), or you could consider expanding your hardware to include another disk drive or a magtape unit. For disks larger than RKØ6s, the overhead of having a small system on each nonsystem disk is usually small enough to be tolerable, although you must decide based upon your system's needs.

If you decide to build a small system on each non-system disk, you may use your standard monitor SIL, the SYSGEN.SIL provided by Digital, or another SIL generated especially for the purpose. The last choice allows you to build a small, special-purpose monitor for use only during backup and restore, thereby minimizing the disk space required. If you generate a special monitor, it should support at least 2 jobs, your two disks, one terminal (KBØ:), have nothing resident, no options, and a minimal number of small buffers. Remember to install any applicable patches to the SIL.

You should place the minimal system for backup on the non-system disk immediately after initializing the disk with DSKINT. This placement ensures that contiguous space is available for the required files. After generating the monitor, Run-Time System, and system library (including the BACKUP package), perform the procedures outlined below. In the examples, the notation 'SYØ:' denotes the disk drive on which your normal system disk is mounted, and 'xxn:' denotes the other disk drive on the system, which is used for various purposes in the procedure.

1. Ensure that the monitor SIL you want to use for your small backup system is on the system disk. Generate it or copy it if necessary.

2. Ensure that the RT11 Run-Time System is on your system disk in account [Ø,1], and that PIP.SAV and HOOK.SAV are on your system disk in account [1,2]. This will be the situation if your SYSGEN target system was SY:. If these files do not all exist in the specified accounts, mount your distribution system disk (with /RONLY) on xxn: and use the following commands to copy RT11 and the required system library programs (user responses are underlined):

```
RUN $PIP.SAV<cr>
*SYØ:[Ø,1]*.*/MO:16=xxn:[Ø,1]RT11.RTS<cr>
*SYØ:$*.*=xxn:$HOOK.SAV,xxn:$PIP.SAV<cr>
*^Z

Ready
```

3. If you have not yet initialized the non-system disk you plan to use, shut down the system, mount the disk on xxn:, and use DSKINT to initialize the disk. You may then start timesharing.

4. Use UTILTY to ADD RT11 as a Run-Time System if you have not already done so.

5. Issue the commands given below:

```
RUN $UTILTY<cr>
<UTILTY's header line>
#MOUNT xxn:packid/PRIVATE<cr>
#UNLOCK xxn:<cr>
#^Z

Ready

RUN $PIP.SAV<cr>
*xxn:[Ø,1]*.*/MO:16=[Ø,1]INIT.SYS,[Ø,1]ssssss.SIL<cr>
*xxn:[Ø,1]*.*/MO:16=[Ø,1]bbbbbb.RTS,[Ø,1]ERR.ERR<cr>
        where ssssss is the SIL you wish to use on your backup disk, and bbbbbb
        is the BASIC-PLUS Run-Time System under which the BACKUP package was
        compiled
*xxn:$*.*/W=SYØ:$BAC???.BAC,$BACKUP.PRM,$SHUTUP.BAC<cr>
        to copy the BACKUP package to the non-system disk
*^Z
```

```
Ready

OPEN 'xxn:[Ø,1]SWAP.SYS/MO:16/SI:128' FOR OUTPUT AS FILE 1%

Ready

CLOSE 1%

Ready

RUN $HOOK.SAV<cr>
*xxn:[Ø,1]INIT.SYS<cr>
Hook complete
*^Z

Ready
```

6. Shut down your system, and use the BOOT option of the initialization code to bootstrap the disk xxn:. Use INSTALL to install the ssssss SIL, which you copied in step 5. Use DEFAULT to set defaults for the backup system. Specify 16K as the SWAP MAX, and bbbbbb as the default Run-Time System.

Your non-system disk is now ready to use. You may dismount it and mount it as a public disk if you desire. When you wish to back up that disk, you must shut down your system and bootstrap the non-system disk. Use START to start timesharing from the small system on the non-system disk. Since INIT.BAC was not moved to the non-system disk, the message:

```
?Can't find file or account
?Program lost-sorry
```

will be printed. You may now do your backup. (Alternatively, you may want to move INIT.BAC to your non-system disk at the time you moved the BACKUP package. In this case, you can include a control file to bring up a limited RSTS/E system and include the backup commands in the control file.)

Physically remove your normal system disk from SYØ: and mount a backup volume in its place. Then use the BACKUP package to preserve the files on the disk. Use a similar procedure to restore any files to the disk. If you lose the entire file structure of the disk, including the system and/or the BACKUP package, you can restore the disk using a system recovery medium as described in Software Dispatch Article Seq 16.1.2 N.

NOTE: If you ever patch or replace on the system disk any of the BACKUP or system modules that you copied in the above procedure, you should do so while the non-system disk is dismounted. After replacing the module(s), mount the non-system disk with the /PRIVATE switch and use PIP (with the /UP switch, update in place, if the output file is INIT.SYS, the monitor SIL, or the default run-time system) to change the file on the non-system disk. Repeat for each disk used on drive xxn: that contains a minimal system for backup purposes. Also, if any patches are installed to the RSTS/E monitor or the INIT.SYS code, be sure to install them on all disks which contain copies of a RSTS/E VØ6C system.

CREATING A SYSTEM DISK RECOVERY MEDIUM

Regular use of the RSTS/E BACKUP package (described in Chapter 18 of the RSTS/E System User's Guide and Chapter 8 of the System Manager's Guide) provides protection against loss of files if the system crashes, if disk errors occur, or if important files are accidently destroyed. However, the one situation from which BACKUP cannot recover is when the system disk or one or more of the monitor files is destroyed and the system cannot be started at all. One option in such an event is to use the RSTS/E distribution kit to regenerate the system, install all patches, build the complete system library, and then restore the remaining files on the system disk from the most recent backup. This is time consuming and error prone. Recovery is much simpler if you have a "recovery medium".

This article tells you how to create a system recovery medium (disk or tape) which contains your fully patched monitor, BASIC-PLUS Run-Time System, and enough of the BACKUP package to restore the rest of the system disk file structure. The recovery medium is bootable in a manner similar to the distribution medium and any intermediate tape (or disk) which you may have created during SYSGEN. In order to recover from destruction of the system disk, you will need the recovery medium and a recent backup of your system disk. Note that this backup must include an up-to-date version of the file [1,2]ACCT.SYS so that the recovery can enter all accounts properly. If you ever change your monitor, or install any patches in any of the files placed on the recovery medium, you should rebuild that medium.

To build the recovery medium, you must have ADDed the RT11 Run-Time System to RSTS/E. You must also have the programs PIP.SAV and HOOK.SAV in account [1,2]. If any of these files is not already on your system disk, mount the first volume of your distribution kit (as device xxn:) write locked. Use the following commands to copy the files and add RT11 (user input is underlined):

```
RUN $PIP.SAV<cr>
*SY:[Ø,1]*.*/MO:16=xxn:[Ø,1]RT11.RTS<cr>
*SY:$*.*=xxn:$HOOK.SAV<cr>
*^Z

Ready

RUN $UTILTY
<UTILTY's Header Line>
#ADD RT11<cr>
#^Z

Ready
```

Follow the instructions in the following sections, depending on whether you wish to build a recovery disk or magtape. In the examples, the file names RSTS.SIL and BASIC.RTS are used as the monitor SIL and default BASIC-PLUS Run-Time System. You should substitute the actual file names for your system.

Building a recovery disk

Using PIP or an editor, create the file RECOVR.CMD in [1,2] containing the following text:

```
SYØ:$*.*=IN:$BAC???.*
SYØ:$*.BAC<232>/RE
SYØ:$BACENT.BAC<1Ø4>/RE
```

Mount a formatted and initialized disk on a free disk drive. (The text below uses xxn: as the device designator and 'packid' as the pack identification for the recovery pack.) If necessary, shut down your system and use DSKINT to format a pack, or use the program DSKINT.BAC to re-initialize an already formatted scratch pack. Using UTILTY or UMOUNT, logically mount xxn:. Follow the procedure below to build the recovery disk (user responses are underlined):

```
RUN $PIP.SAV<cr>
*xxn:[Ø,1]*.*/MO:16=[Ø,1]RT11.RTS<cr>
*xxn:[Ø,1]=SY:[Ø,1]INIT.SYS,[Ø,1]RSTS.SIL,[Ø,1]BASIC.RTS,[Ø,1]ERR.ERR<cr>
*xxn:$*.*=SY:$PIP.SAV,$UTILTY.SAV,$RECOVR.CMD,$BAC???.*<cr>
*^Z

Ready

RUN $HOOK<cr>
*xxn:[Ø,1]INIT.SYS<cr>
Hook complete
*^Z

ready
```

Dismount the recovery disk and save it. Also dismount the distribution medium.

To recover from the destruction of the system disk or one or more of the system files, you need the recovery disk and a recent BACKUP. Mount the recovery disk on one disk drive and bootstrap it. The RSTS/E initialization code runs and prints a header and the OPTION: prompt. On another disk drive, mount the disk on which to restore the system disk. Using the DSKINT option, recreate your system disk with the same parameters that you used at system generation time. Then use the COPY option to move your monitor files to the new system disk. Use the /A switch to copy all relevant files (see RSTS/E VØ6C System Generation Manual, p. 3-13). As part of the COPY option, INIT bootstraps that disk. If necessary, use the HARDWR option to change controller characteristics. Then INSTALL your monitor SIL and use REFRESH to create the required system files on your system disk. Use DEFAULT to change the system default run-time system to RT11. START the system on your new system disk and continue as follows:

```
?Can't find file or account
.ASSIGN xxn:IN
.MOUNT IN:packid/RO<cr>
.R IN:$PIP<cr>
*@IN:RECOVR.CMD<cr>
*^Z
.R IN:UTILTY<cr>
*DISMOUNT IN:<cr>
*SHUTUP
```

Option:

Dismount the recovery disk from drive xxn:. Use DEFAULT to change the system default run-time system back to BASIC. START the system. Your new system disk now has enough of the BACKUP package to restore the entire disk from a recent BACKUP. Do this now, specifying that no files be superseded. You must now use the STANDARD option of REACT to enter all accounts that BACKUP did not enter. Ignore the error messages generated when REACT tries to enter accounts that already exist. Your system disk is now ready to use.

Building a recovery magtape

Using PIP or an editor, create the file RECOVR.CMD in [1,2] containing the following text:

```
SYØ:$*.*/BL=IN:$*.*/RW:NO
SYØ:$*.BAC<232>/RE
SYØ:$BACENT.BAC<1Ø4>/RE
```

Mount a magtape on a free drive (referred to below as xxn:). Follow the procedure below to build the recovery tape (user responses are underlined):

```
RUN $PIP.SAV<cr>
*xxn:/ZE<cr>
Really zero xxn:? YES<cr>
*^Z

Ready

RUN $HOOK<cr>
*xxn:[Ø,1]INIT.SYS,SY:[Ø,1]INIT.SYS<cr>
Hook complete
*^Z

Ready

RUN $PIP.SAV<cr>
*xxn:[Ø,1]*.*/MO:16=[Ø,1]RT11.RTS<cr>
*xxn:[Ø,1]=SY:[Ø,1]RSTS.SIL,[Ø,1]BASIC.RTS,[Ø,1]ERR.ERR<cr>
*xxn:$*.*=SY:$PIP.SAV,$UTILTY.SAV,$RECOVR.CMD,$BAC???.*<cr>
#^Z

Ready
```

Dismount the tape and save it.

To recover from the destruction of the system disk or one or more of the system files, you need the recovery tape and a recent BACKUP. Mount the recovery tape on a tape drive (referred to below as xxn:) and bootstrap it. The RSTS/E initialization code runs and prints a header and the OPTION: prompt. Mount the disk on which to restore the system disk. Using the DSKINT option, recreate your system disk with the same parameters that you used at system generation time. Then use the COPY option to move your monitor files to the new system disk. Use the /A switch to copy all files with the appropriate extensions (see RSTS/E VØ6C System Generation Manual, p. 3-13). As part of the COPY option, INIT bootstraps that disk. If necessary, use the HARDWR option to change controller characteristics. Then INSTALL your monitor SIL and use REFRESH to create the required system files on your system disk. Use DEFAULt to change the default run-time system to RT11. START the system on your new system disk and continue as follows:

```
?Can't find file or account
.ASSIGN xxn:IN<cr>
.R IN:PIP<cr>
*$*.*=IN:$RECOVR.CMD<cr>
*@RECOVR.CMD<cr>
*RECOVR.CMD/DE<cr>
*^Z

Ready
```

Dismount the recovery tape from drive xxn:. Your new system disk now has enough of the BACKUP package to restore the entire disk from a recent BACKUP. Do this now, specifying that no files be superseded. You must now use the STANDARD option of REACT to enter all accounts that BACKUP did not enter. Ignore the error messages generated when REACT tries to enter accounts that already exist. Your system disk is now ready to use.

Notes on multiple disk systems

If your system disk is small, or if the public disk structure consists of more than one disk, some of the BACKUP or other programs may reside on a non-system public disk. In this case, you should copy to the recovery medium only those .BAC files that exist on the system disk. During the recovery procedure, after starting the system on your new system disk, you must physically mount and write-enable the other disks in your system's public structure. Type the command

```
MOUNT xxn:packid
```

for each non-system public disk, replacing xxn: with the disk name and unit, and packid with the pack ID for that disk. This procedure ensures that all required .BAC programs are available for the recovery.

Take the following precautions when creating a recovery disk:

1. If you can mount the recovery disk on an unused drive or in place of a private disk, do so. This leaves the full public disk structure mounted.

2. If you cannot mount the recovery disk in addition to the full public structure, you must dismount a non-system public disk. This disk must not contain any of the files required for the creation of the recovery disk or the actual recovery procedure. This disk can be dismounted while creating the recovery disk, and need not be mounted until a recovery is complete. If necessary, use PIP to copy files from this disk to another disk on the public structure:

   ```
   RUN $PIP.SAV<cr>
   *out:*.*=in:file.ext<cr>
   *in:file.ext/DE<cr>
   *^Z<cr>
   ```

   In these commands, in: is the name and unit number of the disk to be cleared of files, out: is the name and unit number of any other public disk, and file.ext is a file to be moved. Repeat these commands to PIP to copy each file on in: necessary for building the recovery disk or for the recovery procedure itself.

RSTS/E V06C-03
RSX Emulator Package
RSX.RTS

KEYBOARD MONITOR DOES NOT DROP PRIVILEGES - MANDATORY RSX.RTS PATCH

PROBLEM:

When the RSX Run-Time System is a job's default Run-Time System, either by virtue of being the system's default Run-Time System, or as a result of the user having SWITCHed to it, it processes all Keyboard Monitor requests for that job. The problem is, the Keyboard Monitor in the RSX Run-Time System does not explicitly drop privileges before executing any commands. This presents a potentially serious system security exposure. If a non-privileged user runs a privileged program (which he or she is allowed to run), and the program's Run-Time System is RSX, unless the program drops privileges before exiting to the Keyboard Monitor, the user will retain those privileges. The user can then run any program in the system, including all privileged programs.

SOLUTION:

The following patch will cause privileges to be dropped before a program running under the RSX Run-Time System exits to the Keyboard Monitor.

PROCEDURE:

1. This is a required patch to the RSX Run-Time System.

2. The patch described in Step 4 below can be installed using the PATCH option after bootstrapping your system disk:

   ```
   Option: PATCH
   File to patch? RSX.RTS
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>     (RETURN for manual patch installation)
   File to patch? [0,1]RSX.RTS
   File found in account [0,1]
   ```

   The patch is also contained in a command file appearing in patch kit version "E" or later.

4. The patch is as follows:

```
File to patch? RSX.RTS
Base address? ..EXIT
Offset address? 56
 Base    Offset  Old      New?
??????  000056  000137  ? <lf>          (no change; verify only)
??????  000060  ??????  ? PATCH+40
??????  000062  162716  ? ^Z            (CTRL/Z for new offset)
Offset address? ^Z                     (CTRL/Z for new base)
Base address? PATCH
Offset address? 40
 Base    Offset  Old      New?
??????  000040  000000  ? 12737
??????  000042  000000  ? -1
??????  000044  000000  ? XRB
??????  000046  000000  ? .CLEAR
??????  000050  000000  ? 137
??????  000052  000000  ? ..NEW
??????  000054  000000  ? ^C            (CTRL/C to exit;up-arrow/C for ONLPAT)

Option:
```

5. If the above patch was installed using ONLPAT, it will take effect the next time the Run-Time System is reloaded. If the Run-Time System has been ADDed, execute the following commands:

```
RUN $UTILTY<cr>
<UTILTY's header line>
#UNLOAD RSX
#EXIT
```

If the Run-Time System was previously loaded permanently, reload it as follows:

```
RUN $UTILTY<cr>
<UTILTY's header line>
#LOAD RSX/STAY/ADDR:nnn
#EXIT
```

RSTS/E VØ6C-Ø3
RT-11 Emulator Package
RT11.RTS

Seq 22.2.1 M

RT11 INCORRECTLY TRANSLATES LOGICAL DEVICE NAMES - MANDATORY RT11.RTS PATCH

PROBLEM:

Some utility programs which run under RT11.RTS rely on the Run-Time System to translate logical device names. In some instances RT11.RTS may translate logical device names improperly.

SOLUTION:

The following mandatory patch to RT11.RTS fixes this problem.

PROCEDURE:

1. This is a mandatory patch to the RT11 Run-Time System.

2. The patch described in Step 4 below can be installed using the PATCH option after bootstrapping your system disk:

   ```
   Option: PATCH
   File to patch? RT11.RTS
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>     (RETURN for manual patch installation)
   File to patch? RT11.RTS
   File found in account [Ø,1]
   ```

   The patch is also contained in a command file appearing in patch kit version "E" or later.

4. The patch is as follows:

```
Base address? 160000
Offset address? 4406
 Base   Offset  Old     New?
160000  004406  010146  ? 4737
160000  004410  016501  ? 177600
160000  004412  000204  ? 100412
160000  004414  030027  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? 177600
Offset address? 0
 Base   Offset  Old     New?
177600  000000  000000  ? 11646
177600  000002  000000  ? 10166
177600  000004  000000  ? 2
177600  000006  000000  ? 16501
177600  000010  000000  ? 204
177600  000012  000000  ? 250
177600  000014  000000  ? 5700
177600  000016  000000  ? 207
177600  000020  000000  ? ^C          (CTRL/C to exit;up-arrow/C for ONLPAT)

Option:
```

5. If the above patch was installed using ONLPAT, it will take effect the next time the Run-Time System is reloaded. If the Run-Time System has been ADDed, execute the following commands:

```
RUN $UTILTY<cr>
<UTILTY's header line>
#UNLOAD RT11
#EXIT
```

If the Run-Time System was previously loaded permanently, reload it as follows:

```
RUN $UTILTY<cr>
<UTILTY's header line>
#LOAD RT11/STAY/ADDR:nnn
#EXIT
```

RSTS/E V06C-03
RT-11 Emulator Package
PIP.SAV

Seq 22.13.4 M

********** Supersedes Article September, 1978 **********

ACCOUNTING STATISTICS NOT RESET ON FILE MERGE OPERATIONS - MANDATORY PIP.SAV PATCH

PROBLEM:

When transferring files with PIP.SAV, the date and time of last access for all input files are reset to reflect the status of the file before the transfer took place. When merging several files into one output file, PIP.SAV fails to reset accounting statistics on all input files except the first.

SOLUTION:

The following mandatory patch solves this problem.

PROCEDURE:

1. This is a required patch to PIP.SAV.

2. The patch described in Step 4 below can NOT be installed using the PATCH option of INIT.SYS.

3. This patch can be installed manually using ONLPAT, the on-line patching program:

```
RUN $ONLPAT
Command File Name? <cr>              (RETURN for manual patch installation)
File to patch? [1,2]PIP.SAV
File found in account [1,2]
```

   The patch is also contained in a command file appearing in patch kit version "D" or later.

RSTS/E V06C-03
RT-11 Emulator Package
PIP.SAV

4. The patch is as follows:

```
Base address? 2176
Offset address? 10356
 Base   Offset  Old     New?
002176  010356  005767  ? 240
002176  010360  010740  ? 240
002176  010362  001112  ? 240
002176  010364  105767  ? ^Z            (CTRL/Z for new offset)
Offset address? 10506
 Base   Offset  Old     New?
002176  010506  105767  ? 4737
002176  010510  010524  ? 25236
002176  010512  001036  ? ^Z            (CTRL/Z for new offset)
Offset address? ^Z                     (CTRL/Z for new base)
Base address? 25236
Offset address? 0
 Base   Offset  Old     New?
025236  000000  000000  ? 5737
025236  000002  000000  ? 23530
025236  000004  000000  ? 1404
025236  000006  000000  ? 137
025236  000010  000000  ? 13006
025236  000012  000000  ? 105737
025236  000014  000000  ? 20746
025236  000016  000000  ? 207
025236  000020  000000  ? ^C           (up-arrow/C to exit)
Patch complete
1 patch installed

Command File Name ? ^Z                 (CTRL/Z to exit)
```

FORTRAN IV/RSTS/E V2
for RSTS/E V6C

ERR= AND END= FOR UNFORMATTED FILES DO NOT WORK (SPR 11-19Ø91 MCdW)

The problems with the ERR= and End- branches has been brought to our attention and work is being done to correct them. They will be fixed by means of patches, if possible. This problem is being researched for a future release.

FORTRAN IV/RSTS/E V2
for RSTS/E V6C

Seq 23.2.1Ø R
1 of 1

THE EOF IS NOT DETECTED PROPERLY (SPR 23.2.1Ø MCdW)

An end-of-file condition cannot occur during direct access READ or WRITE statements. Attempting to read or write a record using a record number greater than the maximum specified for the unit is an error condition.

FORTRAN Language Reference Manual

DEC-11-LFLRA-C-D (S-1S)

This is a restriction for direct-access files.

DIBOL-11/DECFORM V1
for RSTS/E V6C
DIBOL

Seq 26.5.27 O
1 of 2

"HANG" DIBOL PROGRAMS WHEN LP GOES OFFLINE (SPR 11-17327A ES)

DIBOL applications have difficulty recovering smoothly from LP going offline.

The following patch will cause DIBOL programs to "hang" while doing LP output if the printer goes offline. The program will remain hung until it is aborted or the LP comes back online. In the latter case printing and program execution will resume with no loss of data.

DIBOL-11/DECFORM V1
for RSTS/E V6C
DIBOL


```
RUN $UTILTY
UTILTY  V06C-03 RSTS V06C-03 Development 570
#REMOVE DIBOL
#^Z

Ready

RUN $PIP
*[0,1]DIBOL.OLD/CL:64=[0,1]DIBOL.RTS/CO
*^Z

Ready

RUN $ODT
ODT     V06C-03A        RSTS V06C-03 Development 570
File<MEMORY>? [0,1]DIBOL.RTS <LINEFEED> TERMINATES EVERY LINE
                                        UNLESS OTHERWISE NOTED
*1000;0R
*0,304/ 000000 4737
0,000306/ 000000 173042
0,000310/ 000000 122762
0,000312/ 000000 6
0,000314/ 000000 14
0,000316/ 000000 1003
0,000320/ 000000 12737
0,000322/ 000000 4
0,000324/ 000000 456
0,000326/ 000000 104004
0,000330/ 000000 122737
0,000332/ 000000 16
0,000334/ 000000 402
0,000336/ 000000 1004
0,000340/ 000000 122762
0,000342/ 000000 6
0,000344/ 000000 14
0,000346/ 000000 1402
0,000350/ 000000 137
0,000352/ 000000 172704
0,000354/ 000000 10046
0,000356/ 000000 12700
0,000360/ 000000 442
0,000362/ 000000 12710
0,000364/ 000000 1
0,000366/ 000000 12020
0,000370/ 000000 12710
0,000372/ 000000 140400
0,000374/ 000000 12600
0,000376/ 000000 753 <RETURN>
*30146;0R
*0,3530/ 004767 137
0,003532/ 000140 140304
0,003534/ 104004 240 <RETURN>
*^Z
Ready

RUN $UTILTY
UTILTY  V06C-03 RSTS V06C-03 Development 570
#ADD DIBOL
#^Z

Ready
```

DIBOL-11/DECFORM V1
for RSTS/E V6C
DIBOL VCØ3-ØØO

PROBLEM FOLLOWING OPEN WITH ILLEGAL FILENAME (SPR 11-19273 ES)

If an open statement fails because of an illegal filename subsequent opens on the same I/O channel will fail with error 16 - channel in use.

The following patch corrects this problem and changes the version to Dibol VCØ3-ØØP.

```
RUN $UTILTY
UTILTY  V06C-03 RSTS V06C-03 Development 570
#REMOVE DIBOL
#^Z

Ready

RUN $PIP
*[0,1]DIBOL.OLD/CL:64=[0,1]DIBOL.RTS/CO
*^Z

Ready

RUN $ODT
ODT     V06C-03A        RSTS V06C-03 Development 570
File<MEMORY>? [0,1]DIBOL.RTS <LINE FEED> TERMINATES EACH
                             LINE UNLESS OTHERWISE NOTED
*1000;0R
*0,402/ 000000 5002
0,000404/ 000000 4737
0,000406/ 000000 177036
0,000410/ 000000 137
0,000412/ 000000 174452 <RETURN>
*2606;0R
*0,6571\ 117 120 <RETURN>
*30146;0R
*0,536/ 004767 4737
0,000540/ 004542 140402 <RETURN>
*^Z
Ready

RUN $UTILTY
UTILTY  V06C-03 RSTS V06C-03 Development 570
#ADD DIBOL
#^Z
```

RSTS/E V06C-03
BASIC-PLUS-2 V1.04
BP2COM Run-Time System

SYSTEM SECURITY EXPOSURE WITH BASIC-PLUS-2 KEYBOARD MONITOR

PROBLEM:

When the BP2COM Run-Time System is a job's default Run-Time System, either by virtue of being the system's default Run-Time System or as a result of user having SWITCHed to it, it processes all Keyboard Monitor requests for that job. The Keyboard Monitor within the the BP2COM Run-Time System, however, does not explicitly drop privileges before executing any commands. This presents a potentially serious system security exposure. If a non-privileged user runs a privileged program (which is allowed), and the program's Run-Time System is BP2COM, unless the program drops privileges before exiting to the keyboard monitor, the user will retain those privileges. The user could then run any program in the system, including all privileged programs.

SOLUTION:

The following mandatory patch will cause privileges to be dropped before a program running under the BP2COM Run-Time System exits to the Keyboard Monitor.

PROCEDURE:

1. The Run-Time System must be removed with the UTILTY program as follows:

```
RUN UTILTY
<UTILTY's header line>
#REMOVE BP2COM
#^Z                                          (CTRL/Z to exit)
```

2. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file? B04012=                        (Produces a permanent record)
File to patch? BP2COM.RTS
Base address? ..EXIT
Offset address? 56
 Base       Offset  Old     New?
??????      000056  000167  ? 137
??????      000060  000622  ? PATCH+152
??????      000062  104034  ? ^Z             (CTRL/Z for new offset)
Offset address? ^Z                           (CTRL/Z for new base)
Base address? PATCH
Offset address? 152
 Base       Offset  Old     New?
??????      000152  000000  ? 12737
??????      000154  000000  ? -1
??????      000156  000000  ? XRB
??????      000160  000000  ? .CLEAR
??????      000162  000000  ? 137
??????      000164  000000  ? ..NEW
??????      000166  000000  ? ^C             (Up-arrow/C to exit)
```

3. Add the RTS back using the UTILTY program as follows:

```
RUN $UTILTY
<UTILTY's header line>
#ADD BP2COM
#Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2
for RSTS/E VØ6C-Ø3
BP2COM OBJECT LIBRARY PATCHES

Seq 27.6.37 M

Supersedes article dated Oct. 78

UPDATE DOES NOT CORRECTLY SET RECORDSIZE

PROBLEM:

When using UPDATE without the COUNT option, the recordsize is often not properly set, resulting in random errors.

SOLUTION:

This mandatory patch to the object library file (BP2COM.OLB) will cure the problem. It must be installed in any version of the library (EIS, FIS, or FPU).

PROCEDURE:

1. Build the following correction file using an editor and name it: ICRUN.COR

```
                .TITLE  $ICRUN
                .IDENT  /Ø1CMA/

                $$PC=.
                .=.+16
                BR      PAT
                .=$$PC+56
PAT:            CALL    $VALID
                MOV     3Ø(RØ),34(RØ)
                BR      $$PC+22
                .END
```

2. Assemble the correction file as follows:

```
        RUN $MAC.TSK
        MAC>ICRUN.PAT,ICRUN.LIS=ICRUN.COR
        MAC>^Z                          (CTRL/Z to exit)
```

3. Extract the original module as follows:

```
RUN $LBR.TSK
LBR>ICRUN.OLD=[1,1]BP2COM/EX:$ICRUN
LBR>^Z                          (CTRL/Z to exit)
```

4. Run the patch utility to merge old module and correction:

```
RUN $PAT.TSK
PAT>ICRUN=ICRUN.OLD/CS:2Ø224,ICRUN.PAT/CS:6772
PAT>^Z                          (CTRL/Z to exit)
```

5. Replace the original module as follows:

```
RUN $LBR.TSK
LBR>[1,1]BP2COM/RP=ICRUN
LBR>^Z                          (CTRL/Z to exit)
```

6. Re-TASK BUILD any programs that used this module.

SORT-11 V2
for RSTS/E VØ6C-Ø3
SORT-11 OBJECT PATCHES

ALTSEQ LINE IN SPECIFICATION FILE IS NOT ACCEPTED

If an ALTSEQ line is included in the sort specification file, the sort fails to execute and gives the error: "INCORRECT SEQUENCE".

SOLUTION:

This mandatory patch to SORT-11 V2 will cure the problem.

PROCEDURE:

1. Obtain the build map for SORT-11.
2. Find the page with SEGMENT:SORTCF.
3. Find the line starting with "DISK BLK LIMITS" and note the first number to the right:

   (DSK) = _____

4. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch?  [1,2]SORT.TSK
File found in account [1,2]
Base address?  (DSK):Ø
Offset address?  2Ø22
Base    Offset  Old     New?
??????  ØØ2Ø22  Ø2Ø523  ? 22345
??????  ØØ2Ø24  Ø12ØØ5  ? ^Z
Offset address?  ^Z
Base address?  ^Z                              (CTRL/Z to exit)
```

5. SORT-11 V2 is now ready for use.

RPG II V8.Ø2
for RSTS/E V6C

Seq 32.1.2 O
1 of 1

INDEX SEQUENTIAL FILE ERROR (SPR 11-188ØØ YL)

Index sequential file with more than 5 keys will result in RMS error -1168.

RPG run time system temporarily limit the maximum number of keys of an index sequential file as 5. If you have more than 5 keys, then you can add the following parameter to RPG.CMD file before you task-build your RPG program.

GBLDEF = D.IDX:M Where M is the octal number of keys defined in an indexed file.

For Example: Suppose your index sequential file has 7 keys, then add

GBLDEF = D.IDX: 7 to RPG.CMD file, then task build your program. Ignore D.IDX multiply defined error message during TKB.

RPG II V8.02
for RSTS/E V6C
Compiler V8.02

Supersedes article dated Sep 78.

MOVEL AND MOVE ADDRESSING FAILURES - MANDATORY COMPILER PATCH (CJ)

PROBLEM:

The move operations into arrays give results which contain characters from the previous array operation.

For MOVEL and MOVE, the array element is not being unloaded to the hold area before being executed; therefore, the shorter source field is being moved into an un-initialized hold area, then stored in the array element.

SOLUTION:

The patch detailed below will add some further testing for MOVEL indexing modes and will produce the proper OTS calls to unload the array before the MOVE or MOVEL operations are performed.

NOTE

This patch must be applied to the (unpatched) RPGCMP.CMD file that is included in the RPG II V8.02 distribution kit.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG Compiler task build command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGCMP.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account, and that all other necessary files (RPGCMP.ODL and RPGCMP.OLB) are located in that account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGCMP.CMD=RPGCMP.CMD<cr>
#[logfile=]<cr>
*H/RPG/V<cr>
$RPG/FU/CP,RPGCMP=RPGCMP/SS/MP<cr>
```

```
*0AC<cr>
;                       BUILD RPG II V8.02 COMPILER<cr>
<cr>
<esc>*V<cr>
RPG/FU/CP,RPGCMP=RPGCMP/SS/MP<cr>
*AI<cr>
<cr>
<esc>*H/20K/V<cr>
;<tab><tab><tab>34000 OCTAL BYTES GIVES A 20K COMPILER;<cr>
*-3C/16K/V<cr>
;<tab><tab><tab>34000 OCTAL BYTES GIVES A 16K COMPILER;<cr>
*H/= OF/V<cr>
;<tab><tab><tab>= OF LINES/PAGE FOR LISTINGS<cr>
*-4C/# OF/V<cr>
;<tab><tab><tab># OF LINES/PAGE FOR LISTINGS<cr>
*H/INSERT PATCHES HERE/V<cr>
;INSERT PATCHES HERE -- V8.03<cr>
*G/V8.03/-C/2/V<cr>
;INSERT PATCHES HERE -- V8.02<cr>
*AL<cr>
;<cr>
*AI<cr>
; V8.02A -- MOVEL INTO ARRAY<cr>
;<cr>
GBLPAT=CLC:C.CLC+3314:1423<cr>
GBLPAT=CLC:C.CLC+3504:62434:101436:42330:174223:134224:4156<cr>
GBLPAT=CLC:C.CLC+3520:17435:5565:17434:3017<cr>
GBLPAT=CLC:C.CLC+6474:57514:106775:144172:6406:1436<cr>
;<cr>
GBLPAT=C.STKS:C.EDLV:101<cr>
<esc>*V<cr>
/<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-build the RPG Compiler and re-enter it into the system library, type the following RSTS/E commands.

```
RUN $TKB.TSK<cr>
TKB>@RPGCMP<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*$RPG.TSK=RPG.TSK<cr>
*=$RPG.TSK<232>/RE<cr>
*^Z

Ready
```

RPG II V8.02
for RSTS/E V6C
Compiler V8.02

Seq 32.2.2 M
3 of 3
Supersedes article dated Sep 78.

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. The command file and other files used during the patching procedures should now be removed from the public structure.

RPG II V8.02
for RSTS/E V6C
Compiler V8.02A

NUMBER OF FILES LIMIT INCORRECT - MANDATORY COMPILER PATCH (SPR 11-18151 YL)

PROBLEM:

When the RPG Compiler builds the .CMD file for the Task Builder, it enters the number for the 'UNITS=' option as an octal number. TKB expects a decimal number. This results in limiting an RPG program to 10 files in the RSTS/E environment.

SOLUTION:

The patch detailed below will correct the number of units.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG Compiler task build command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGCMP.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account, and that all other necessary files (RPGCMP.ODL and RPGCMP.OLB) are located in that account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGCMP.CMD=RPGCMP.CMD<cr>
#[logfile=]<cr>
*H/V8.02A/V<cr>
; V8.02A -- MOVEL INTO ARRAY<cr>
*5AL<cr>
GBLPAT=CLC:C.CLC+6474:57514:106775:144172:6406:1436<cr>
*AI<cr>
;<cr>
; V8.02B -- NUMBER OF DEVICE UNITS<cr>
;<cr>
GBLPAT=EXIT:C.CLSE+414:121322<cr>
<esc>*V<cr>
;<cr>
```

```
*G/C.EDLV:/V<cr>
GBLPAT=C.STKS:C.EDLV:101<cr>
*2JC/2/V<cr>
GBLPAT=C.STKS:C.EDLV:102<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-build the RPG Compiler and re-enter it into the system library, type the following RSTS/E commands.

```
RUN $TKB.TSK<cr>
TKB>@RPGCMP<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*$RPG.TSK=RPG.TSK<cr>
*=$RPG.TSK<232>/RE<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. The command file and other files used during the patching procedures should now be removed from the public structure.

RPG II V8.02
for RSTS/E V6C
Compiler V8.02B

OUTPUT RECORD AND/OR FAILURE - MANDATORY COMPILER PATCH (SPR 11-18151 YL)

PROBLEM:

Complex output records using AND/OR extensions for grouping indicators, where AND lines follow OR lines, are being processed as OR.

SOLUTION:

The patch detailed below will modify the output phase at task build time to correct this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG Compiler task build command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGCMP.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account, and that all other necessary files (RPGCMP.ODL and RPGCMP.OLB) are located in that account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGCMP.CMD=RPGCMP.CMD<cr>
#[logfile=]<cr>
*H/V8.02B/V<cr>
; V8.02B -- NUMBER OF DEVICE UNITS<cr>
*2AV<cr>
GBLPAT=EXIT:C.CLSE+414:121322<cr>
*AI<cr>
;<cr>
; V8.02C -- OUTPUT AND/OR COMPLEX RECORDS<cr>
;<cr>
GBLPAT=OUT:C.OUT+1756:465<cr>
<esc>*H/C.EDLV:/V<cr>
GBLPAT=C.STKS:C.EDLV:102<cr>
*G/102/-C/3/V<cr>
GBLPAT=C.STKS:C.EDLV:103<cr>
*EX<cr>
```

RPG II V8.02
for RSTS/E V6C
Compiler V8.02B

Seq 32.2.4 M
2 of 2

```
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-build the RPG Compiler and re-enter it into the system library, type the following RSTS/E commands.

```
RUN $TKB.TSK<cr>
TKB>@RPGCMP<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*$RPG.TSK=RPG.TSK<cr>
*=$RPG.TSK<232>/RE<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. The command file and other files used during the patching procedures should now be removed from the public structure.

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Supersedes article dated Oct 78.

SEVERAL OTS PROBLEMS - MANDATORY OTS PATCH (JE)

PROBLEM:

This article encompasses several problems with the RPG OTS.

a. The OTS will fail for programs which access Indexed files by Addrout, aborting with "?Unibus timeout" or "RMS Error -1168" or "RMS Error -484". The same problem exists when an RMS Indexed file is accessed by RPG as a sequential file.

b. If the last (right-most) field in an output record is Packed, in some cases the last packed digit will look like a blank or terminator and be trimmed off by the OTS, causing a short record (reported as "RMS Error -1568" which means Bad Record Size).

c. If a fatal error occurs before all files have been opened (and any of these have been reassigned), the program may trap while closing and terminating after reporting the error. The trap may be "?Memory management violation" or "?Unibus timeout".

d. If a sequential or relative file is being processed by Addrout, the OTS instead will do simple sequential input.

SOLUTION:

The patches detailed below correct the problems listed.

a. This patch corrects the problem by causing the OTS to treat the Indexed file consistently as Indexed, for buffering and other setup.

b. This patch corrects the problem by disabling line-trimming for non-Carriage Control devices.

c. This patch corrects the problem.

d. This patch corrects the problem.

NOTE

These patches encompass, and supersede, the patches that were included in the Release Notes distributed with RPG II V8.02. The patches have been reformatted as they will appear for future corrections.

The patches found here must be applied to the (unpatched) RPGPAT.CMD file that is included in the RPG II V8.02 distribution kit.

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Seq 32.3.1 M
2 of 3
Supersedes article dated Oct 78.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/DEFINE Q.ZONU/V<cr>
; DEFINE Q.ZONU AS 0 FOR OVERPUNCHED NUMERIC, 1 FOR ZONED NUMERIC:<cr>
*2AI<cr>
;<cr>
; EXTEND PATCH SPACE<cr>
EXTSCT=$$RPG0:176<cr>
; V8.02A -- INDEXED ADDROUT PROCESSING<cr>
GBLPAT=XXOPN:.OPEN+754:400<cr>
GBLPAT=XXOPN:.OPEN+1114:400<cr>
GBLPAT=XXOPN:.OPEN+1246:4737:2000:4<cr>
GBLPAT=XXOPN:.OPEN+1772:4737:2000:34<cr>
GBLPAT=RMSOV:M.PAT+10:122765:176440:6:1431:122765:40:25<cr>
GBLPAT=RMSOV:M.PAT+26:1022:52762:100000:2:416:132762<cr>
GBLPAT=RMSOV:M.PAT+42:100000:2:11603:12763:166703:50<cr>
GBLPAT=RMSOV:M.PAT+56:132762:100000:2:1003:12763:401<cr>
GBLPAT=RMSOV:M.PAT+72:50:62716:2:207:62716:2:264:207<cr>
;<cr>
; V8.02B -- PACKED FIELD LAST IN RECORD<cr>
GBLPAT=XXSEQ:.WRITE+126:4737:2000:106:400<cr>
GBLPAT=RMSOV:M.PAT+112:32762:40000:2:1365:16265:40:30<cr>
GBLPAT=RMSOV:M.PAT+130:12616:62716:24:207<cr>
;<cr>
; V8.02C -- CLOSE FILES AFTER FATAL ERROR<cr>
GBLPAT=XXCLS:.CLOSE+52:4737:2000:134<cr>
GBLPAT=RMSOV:M.PAT+140:116503:1641:70327:16:60503:62703:2450:160003<cr>
GBLPAT=RMSOV:M.PAT+160:103404:16065:2:4:741:5726:207<cr>
;<cr>
; V8.02D -- NONINDEXED ADDROUT PROCESSING<cr>
GBLPAT=RMSOV:R.INRA+16:52762:100000:2:240<cr>
<esc>*EX<cr>
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Seq 32.3.1 M
3 of 3
Supersedes article dated Oct 78.

```
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Seq 32.3.2 O
1 of 2
Supersedes article dated May 78.

HALT MESSAGE ERROR SEVERITY - OPTIONAL OTS PATCH (JE)

PROBLEM:

Halt messages do not cause batch streams to abort.

SOLUTION:

The optional patch detailed below will cause halt messages to be printed preceded by a question mark, thereby causing a batch stream to abort if it has not been set to ignore Fatal errors. With this patch, for example, H0 on at the start of the cycle would result in the message "?H0 IS ON".

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/DEFINE Q.ZONU/V<cr>
; DEFINE Q.ZONU AS 0 FOR OVERPUNCHED NUMERIC, 1 FOR ZONED NUMERIC:<cr>
*2AI<cr>
;<cr>
; V8.02 -- HALT MESSAGE ERROR SEVERITY<cr>
GBLPAT=M.ABRT:M.ABRT+332:37415<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Seq 32.3.2 O
2 of 2
Supersedes article dated May 78.

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02D

Seq 32.3.3 M
1 of 2
Supersedes article dated May 78.

OVERLAY STRUCTURE DEGRADES PERFORMANCE - MANDATORY OTS PATCH (JE)

PROBLEM:

The overlay structure for the OTS I/O modules causes unnecessary overlaying from disk during the RPG cycle. This severely degrades execution speed.

SOLUTION:

The patches to the RPG OTS patch command file and overlay description file that are detailed below correct this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS task builder files are located on the public disk structure. In the patching procedure, we will, therefore, refer to those files by their simplest forms: RPGPAT.CMD and RPGOTS.ODL. If the files are not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command files for this patch appear in patch kit version "C" or later. If you do not have that distribution, you can produce command files by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/V8.02C/V<cr>
; V8.02C -- CLOSE FILES AFTER FATAL ERROR<cr>
*G/XXCLS/V<cr>
GBLPAT=XXCLS:.CLOSE+52:4737:2000:134<cr>
*-5C/RMSOV/V<cr>
GBLPAT=RMSOV:.CLOSE+52:4737:2000:134<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02D

Seq 32.3.3 M
2 of 2
Supersedes article dated May 78.

```
File to patch - RPGOTS.ODL=RPGOTS.ODL<cr>
#[logfile=]<cr>
*H/D:/V<cr>
D:<tab>.FCTR<tab>RTSOV2-*(BB1,BB2,BB3,BB4)<cr>
*G/BB4/-4DV<cr>
D:<tab>.FCTR<tab>RTSOV2-*(BB1,BB2,BB3)<cr>
*G/SYS:/V<cr>
SYS:<tab>.FCTR<tab>SYS1-SYS2-SYS3<cr>
*G/SYS3/I/-BB4/V<cr>
SYS:<tab>.FCTR<tab>SYS1-SYS2-SYS3-BB4<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file and the overlay description file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*$RPGOTS.ODL<40>=RPGOTS.ODL<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new versions of the command and overlay descriptor files.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02D

Seq 32.3.4 M
1 of 2
Supersedes article dated Jun 78.

OTS ERROR REPORTING PROBLEMS - MANDATORY OTS PATCH (JE)

PROBLEM:

There are two problems with error reporting:

e. Certain RPG errors (e.g., Invalid Packed Digit) may be non-file-specific. For these, the OTS gives a message which lists information for all of the RPG files. If some of these have not been opened when such an error occurs, the program may trap to the monitor (e.g., with "?Unibus timeout" error) when the OTS tries to access the filespec of an unopened file.

f. At least some of the monitor-code RMS errors (those which have non-specific RMS codes but more detailed associated monitor codes) should be retry-able, as enabled by RPGASN's /QU switch. For example, if the line printer goes off-line, this may result in RMS code -1776 (Write Error) and RSTS/E code 14 (Device hung or write-locked).

SOLUTION:

The patches detailed below correct the problems listed.

e. This patch makes sure the files listed in the message are opened ones.

f. This patch includes these monitor-code errors as retry-able.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/EXTSCT/V<cr>
EXTSCT=$$RPG0:176<cr>
*G/176/-3C/244/V<cr>
EXTSCT=$$RPG0:244<cr>
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02D

Seq 32.3.4 M
2 of 2
Supersedes article dated Jun 78.

```
*H/V8.02D/V<cr>
; V8.02D -- NONINDEXED ADDROUT PROCESSING<cr>
*AV<cr>
GBLPAT=RMSOV:R.INRA+16:52762:100000:2:240<cr>
*AI<cr>
;<cr>
; V8.02E -- TRAP ON RPG ERROR<cr>
GBLPAT=XXRPG:$ERRPG+314:4737:2000:172<cr>
GBLPAT=RMSOV:M.PAT+176:11602:16202:16:116205:177535:70527:16:60205<cr>
GBLPAT=RMSOV:M.PAT+216:62705:344:160105:103404:116162:7:4:717<cr>
GBLPAT=RMSOV:M.PAT+236:62716:177574:207<cr>
;<cr>
; V8.02F -- RETRY ON MONITOR ERRORS<cr>
GBLPAT=XXRMS:$ERRMS+732:25:16702:177642<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Seq 32.3.5 O
1 of 2
Supersedes article dated Jul 78.

PAGING FOR NON-STANDARD LENGTH FORMS - OPTIONAL OTS PATCH (JE)

PROBLEM:

For standard 66-line forms, the OTS pages to top-of-form using the form-feed (FF) character. For other lengths, as set in the Line Counter specification, the OTS uses line-feeds to simulate paging. This assumes a printer whose hardware form-length can not be reset.

However, this increases output time and, if the file is queued to the RSTS/E spooler, prevents restarting in the middle of the file after an interruption (the spooler relies on form-feeds to delimit pages).

SOLUTION:

The optional patch detailed below will cause all paging to be done with form-feed characters, which will solve the problem if your line printer has an adjustable form-length.

NOTE

If your line printer uses a carriage control tape for form-feeding, it will have to be changed to reflect the appropriate form length.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/DEFINE Q.ZONU/V<cr>
; DEFINE Q.ZONU AS 0 FOR OVERPUNCHED NUMERIC, 1 FOR ZONED NUMERIC:<cr>
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02

Seq 32.3.5 O
2 of 2
Supersedes article dated Jul 78.

```
*2AI<cr>
;<cr>
; ENABLE THIS LINE FOR FORM-FEED (FF) PAGING FOR ALL FORM LENGTHS:<cr>
GBLPAT=RMSOV:R.FADV+116:412<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02F

LINE COUNTING WITH OVERPRINT - MANDATORY OTS PATCH

PROBLEM:

When overprinting lines to the Printer (Space After = 0 in column 18 of the Output specification), the OTS includes overprinted lines in the line count for the page, causing premature forms overflow.

SOLUTION:

The patch detailed below corrects this error.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/EXTSCT/V<cr>
EXTSCT=$$RPG0:244<cr>
*G/244/-2C/66/V<cr>
EXTSCT=$$RPG0:266<cr>
*H/V8.02F/V<cr>
; V8.02F -- RETRY ON MONITOR ERRORS<cr>
*AV<cr>
GBLPAT=XXRMS:$ERRMS+732:25:16702:177642<cr>
*AI<cr>
;<cr>
; V8.02G -- LINE-COUNTING WITH OVERPRINT<cr>
GBLPAT=RMSOV:R.RELP+6:4737:2000:240<cr>
GBLPAT=RMSOV:M.PAT+244:16302:270:5362:102:5362:10:62716:4<cr>
GBLPAT=RMSOV:M.PAT+264:207<cr>
<esc>*EX<cr>
```

```
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02G

Seq 32.3.7 M
1 of 2

PLUS-ZERO OVERPUNCH PROBLEM - MANDATORY OTS PATCH

PROBLEM:

Numeric input which terminates with an overpunch 12-0 combination, meaning plus-zero, is treated as an 11-0 or negative value instead.

SOLUTION:

The patch detailed below changes a test in the numeric conversion routine to correct this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/V8.02G/V<cr>
; V8.02G -- LINE-COUNTING WITH OVERPRINT<cr>
*3AV<cr>
GBLPAT=RMSOV:M.PAT+264:207<cr>
*AI<cr>
;<cr>
; V8.02H -- PLUS-ZERO OVERPUNCH<cr>
GBLPAT=RMSOV:R.NUMC+156:121127:172<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02H

INDICATOR HANDLING PROBLEMS - MANDATORY OTS PATCH

PROBLEM:

There are three problems with the indicator handling:

i. When overflow occurs during total time, the overflow is performed twice.

j. If an external indicator is used on an input primary file and the program uses matching record logic on that file, the first record of the secondary file is not processed if the external indicator is off.

k. The OTS is unable to set overflow indicators on or off at the calculation phase for total time output conditioning. The internal overflow switches are resetting the program indicators set during the total time calculation.

SOLUTION:

These problems are all solved by the patches detailed below.

i. This patch modifies overflow switch servicing in the release print record routine.

j. This patch corrects the problem.

k. This patch modifies the program overflow indicator servicing.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
```

RPG II V8.02
   for RSTS/E V6C
OTS V8.02H

Seq 32.3.8 M
2 of 2

```
*H/EXTSCT/V<cr>
EXTSCT=$$RPG0:266<cr>
*G/266/-3C/402/V<cr>
EXTSCT=$$RPG0:402<cr>
*H/V8.02H/V<cr>
; V8.02H -- PLUS-ZERO OVERPUNCH<cr>
*AV<cr>
GBLPAT=RMSOV:R.NUMC+156:121127:172<cr>
*AI<cr>
;<cr>
; V8.02I -- OVERFLOW INDICATOR PROBLEMS<cr>
GBLPAT=RMSOV:R.RELP+76:4767:44<cr>
GBLPAT=RMSOV:R.RELP+136:4737:2000:262:751<cr>
GBLPAT=RMSOV:R.RELP+146:4737:2000:274:16301:276:207<cr>
GBLPAT=RMSOV:M.PAT+266:4767:24:150063:310:404<cr>
GBLPAT=RMSOV:M.PAT+300:4767:12:140063:310:62716:2:207<cr>
GBLPAT=RMSOV:M.PAT+316:16201:6:162701:30:12700:400<cr>
GBLPAT=RMSOV:M.PAT+332:6200:5301:2375:207<cr>
;<cr>
; V8.02J -- EXTERNAL INDICATOR ON SECONDARY FILE<cr>
GBLPAT=M.INIT:M.INIT+124:240:240<cr>
;<cr>
; V8.02K -- OVERFLOW INDICATOR AT TOTAL TIME<cr>
GBLPAT=RMSOV:M.STRT+1666:4737:2000:336<cr>
GBLPAT=RMSOV:M.STRT+1676:240<cr>
GBLPAT=RMSOV:M.PAT+342:105766:2:100003:112721:177777:407:162716:362<cr>
GBLPAT=RMSOV:M.PAT+362:20516:1401:105021:62716:362:62716:2:207<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02K

Seq 32.3.9 M
1 of 2

RELATIVE FILE PROBLEMS - MANDATORY OTS PATCH (SPR 11-18290,-18292 JE)

PROBLEM:

There are two problems with relative files:

1. The /RE[LATIVE] switch (which causes a new file to be created with RMS-11 Relative file organization) is ignored by the OTS. Instead, a Sequential file is created.

m. Attempting sequential update of a file whose organization is RMS-11 Relative results in RMS Error -944 (Invalid Key).

SOLUTION:

The patches detailed below correct these problems.

1. This patch enables the /RE switch.

m. This patch corrects the problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/EXTSCT/V<cr>
EXTSCT=$$RPG0:402<cr>
*G/402/-2C/32/V<cr>
EXTSCT=$$RPG0:432<cr>
*H/V8.02K/V<cr>
; V8.02K -- OVERFLOW INDICATOR AT TOTAL TIME<cr>
*4AV<cr>
GBLPAT=RMSOV:M.PAT+362:20516:1401:105021:62716:362:62716:2:207<cr>
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02K

Seq 32.3.9 M
2 of 2

```
*AI<cr>
;<cr>
; V8.02L -- CREATING RELATIVE FILES<cr>
GBLPAT=XXOPN:.OPEN+1464:402<cr>
;<cr>
; V8.02M -- SEQUENTIAL UPDATE OF RELATIVE FILES<cr>
GBLPAT=XXSEQ:.RECRD+164:4737:2000:376<cr>
GBLPAT=RMSOV:M.PAT+402:16264:104:16:1005:5762:106:1002<cr>
GBLPAT=RMSOV:M.PAT+420:5262:106:62716:2:207<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02M

Seq 32.3.10 M
1 of 2

MOVE ARRAY PROBLEM - MANDATORY OTS PATCH

PROBLEM:

When Move Array (MOVEA) is operating on a field with a string greater than 127 characters, an RPG Error 21 is generated.

SOLUTION:

The patch detailed below corrects this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/V8.02M/V<cr>
; V8.02M -- SEQUENTIAL UPDATE OF RELATIVE FILES<cr>
*3AV<cr>
GBLPAT=RMSOV:M.PAT+420:5262:106:62716:2:207<cr>
*AI<cr>
;<cr>
; V8.02N -- MOVEA INTO FIELDS LONGER THAN 127 CHARACTERS<cr>
GBLPAT=RMSOV:R.MOVA+66:151100<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02N

EXTRA LINE STARTS PRINTR FILES - MANDATORY OTS PATCH (SPR 11-18422 JE)

PROBLEM:

When a PRINTR file is generated by an RPG program, the output begins with a line feed character. This causes the first page to have an extra line and thus to have different alignment from other pages, causing problems with preprinted forms.

SOLUTION:

The patch detailed below corrects this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/V8.02N/V<cr>
; V8.02N -- MOVEA INTO FIELDS LONGER THAN 127 CHARACTERS<cr>
*AV<cr>
GBLPAT=RMSOV:R.MOVA+66:151100<cr>
*AI<cr>
;<cr>
; V8.020 -- EXTRA LINE STARTS PRINTR FILES<cr>
GBLPAT=XXRMS:$ERRMS+34:402<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02O

MULTI-USER FILE ACCESS PROBLEM - MANDATORY OTS PATCH (SPR 11-18627 YL)

PROBLEM:

In some cases, assigning a file (using RPGASN) with the /MU switch (Multi-User) causes the program to abort with RMS Error -480 (Dynamic Memory Exhausted).

SOLUTION:

The patch detailed below corrects this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/V8.02O/V<cr>
; V8.02O -- EXTRA LINE STARTS PRINTR FILES<cr>
*AV<cr>
GBLPAT=XXRMS:$ERRMS+34:402<cr>
*AI<cr>
;<cr>
; V8.02P -- /MU SWITCH<cr>
GBLPAT=XXOPN:.OPEN+2244:240<cr>
<esc>*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

RPG II V8.02
for RSTS/E V6C
OTS V8.02O

Seq 32.3.12 M
2 of 2

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
OTS V8.02P

MULTIPLE PRE-EXECUTION TABLES - MANDATORY OTS PATCH (SPR 11-18781 JE)

PROBLEM:

When multiple (more than 2) pre-execution time tables/arrays are used in a program, it executes correctly but goes into an endless loop at program termination.

SOLUTION:

The patch detailed below corrects this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPG OTS patch command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGPAT.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGPAT.CMD=RPGPAT.CMD<cr>
#[logfile=]<cr>
*H/EXTSCT/V<cr>
EXTSCT=$$RPG0:432<cr>
*G/432/-2C/52/V<cr>
EXTSCT=$$RPG0:452<cr>
*H/V8.02P/V<cr>
; V8.02P -- /MU SWITCH<cr>
*AV<cr>
GBLPAT=XXOPN:.OPEN+2244:240<cr>
*AI<cr>
;<cr>
; V8.02Q -- MULTIPLE PRE-EXECUTION TABLES<cr>
GBLPAT=RMSOV:.CLOSE+72:4737:2000:426<cr>
GBLPAT=RMSOV:M.PAT+432:16065:0:4:5062:50:62716:2:207<cr>
<esc>*EX<cr>
```

```
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG OTS patch command file in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGPAT.CMD<40>=RPGPAT.CMD<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. It is necessary to re-task build your RPG programs in order to take advantage of the corrections just made. It is not necessary to re-compile.

RPG II V8.02
for RSTS/E V6C
RPGFNS V2-00

Seq 32.4.1 O
1 of 2
Supersedes article dated Jul 78.

LEADING ZEROES IN UNPACK DECIMAL - OPTIONAL RPGFNS PATCH (JE)

PROBLEM:

There is an apparent inconsistency between BASIC-PLUS and BASIC-PLUS-2 in the handling of loop counters. As a result, the Unpack Decimal function (FNU$) does not process leading zeroes correctly in unpacking.

SOLUTION:

Until such time as the inconsistency is resolved in BASIC-PLUS-2, the optional patch detailed below will correct the problem.

NOTE

This patch is only necessary if you are unpacking decimal fields which include leading zeroes.

PROCEDURE:

1. For purposes of the discussion, we will assume that the source file of the RPG functions is located on the public disk structure. In the patching procedure, we will, therefore, refer to the file by its simplest form: RPGFNS.B2S. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGFNS.B2S=RPGFNS.B2S<cr>
#[logfile=]<cr>
*H/RPGFNS/V<cr>
22002<tab>!<tab>Program<tab><tab>: RPGFNS<cr>
*H/22160<tab>/V<cr>
22160<tab>W7%=LEN(W$)<tab>W6$=RIGHT(W$,W7%) <cr>
*AV<cr>
<tab>W6%=W6% FOR W6%=1% STEP 1% UNTIL MID(W$,W6%,1%)>"0" <cr>
*KI<cr>
<tab>W6%=1% UNTIL MID(W$,W6%,1%)>="0" W6%=W6%+1% NEXT <cr>
<esc>*V<cr>
<tab>W$=MID(W$,W6%,W7%-W6%)<tab>W$="0" IF W$="" <cr>
```

RPG II V8.02
for RSTS/E V6C
RPGFNS V2-00

Seq 32.4.1 O
2 of 2
Supersedes article dated Jul 78.

```
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To replace the RPG functions in the system library, type the following RSTS/E commands.

```
RUN $PIP.SAV<cr>
*$RPGFNS.B2S<40>=RPGFNS.B2S<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the functions.

RPG II V8.02
for RSTS/E V6C
RPGASN V2.02

Seq 32.5.1 M
1 of 2
Supersedes article dated Sep 78.

ALLOCATE AND APPEND SWITCHES - MANDATORY RPGASN PATCH (SPR 11-18291 JE)

PROBLEM:

Specifying /AL[LOCATE] or /AP[PEND] in a file reassignment (using RPGASN) causes these attributes to be applied to the assignment file (RPGASN.DAT) as well as the assigned filespec. For example, the entry AAA=OUTPUT.DAT/AL:100 causes 100 blocks to be allocated to RPGASN.DAT when RPGASN is exited.

SOLUTION:

The patch detailed below corrects this problem.

NOTE

This patch must be applied to the (unpatched) RPGASN.CMD file that is included in the RPG II V8.02 distribution kit.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPGASN task build command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGASN.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account, and that the other necessary file (RPGASN.ODL) is located in that account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGASN.CMD=RPGASN.CMD<cr>
#[logfile=]<cr>
*H/$RPGASN/V<cr>
$RPGASN=RPGASN/MP<cr>
*0ADV<cr>
RPGASN=RPGASN/MP<cr>
*4AV<cr>
/<cr>
```

```
*I<cr>
;<cr>
; INSERT PATCHES HERE -- V2.02<cr>
;<cr>
; V2.02A -- APPEND AND ALLOCATE SWITCHES<cr>
GBLPAT=RMS11:D.ALTB+2:34632<cr>
GBLPAT=RMS11:D.APTB+2:34632<cr>
<esc>*V<cr>
/<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-build the RPGASN program and re-enter it into the system library, type the following RSTS/E commands.

```
RUN $TKB.TSK<cr>
TKB>@RPGASN<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*$RPGASN.TSK=RPGASN.TSK<cr>
*=$RPGASN.TSK<232>/RE<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. The command file and other files used during the patching procedures should now be removed from the public structure.

RPG II V8.02
for RSTS/E V6C
RPGASN V2.02A

Supersedes article dated Oct 78.

CHANGING ENTRIES WHICH USE /TASK - MANDATORY RPGASN PATCH (SPR 11-18780 JE)

PROBLEM:

After changing an existing entry which specifies a task, e.g.:

```
LPT/TA:PAYROL=LP1:
```

subsequent entries, changes, and deletions will not be made correctly. Duplicates may appear, and certain entries may become inaccessible.

SOLUTION:

The patch detailed below corrects this problem.

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPGASN task build command file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: RPGASN.CMD. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account, and that the other necessary file (RPGASN.ODL) is located in that account.

2. The command file for this patch appears in patch kit version "C" or later. If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGASN.CMD=RPGASN.CMD<cr>
#[logfile=]<cr>
*H/V2.02A/V<cr>
; V2.02A -- APPEND AND ALLOCATE SWITCHES<cr>
*2AV<cr>
GBLPAT=RMS11:D.APTB+2:34632<cr>
*AI<cr>
;<cr>
; V2.02B -- CHANGING ENTRIES WHICH USE /TASK<cr>
GBLPAT=RMS11:.ASN+2044:62767:14:30542<cr>
GBLPAT=RMS11:.ASN+2074:402<cr>
<esc>*V<cr>
/<cr>
*EX<cr>
```

RPG II V8.02
for RSTS/E V6C
RPGASN V2.02A

Seq 32.5.3 M
2 of 2
Supersedes article dated Oct 78.

```
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-build the RPGASN program and re-enter it into the system library, type the following RSTS/E commands.

```
RUN $TKB.TSK<cr>
TKB>@RPGASN<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*$RPGASN.TSK=RPGASN.TSK<cr>
*=$RPGASN.TSK<232>/RE<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the command file.

5. The command file and other files used during the patching procedures should now be removed from the public structure.

RPG II V8.02
for RSTS/E V6C
RPGDCV V2-02

Seq 32.6.1 M
1 of 4
Supersedes article dated Oct 78.

CONVERT NEGATIVE PACKED DATA - MANDATORY RPGDCV PATCH (GT)

PROBLEM:

RPGDCV uses a PRINT statement to create a sequential RMS file. This may cause problems when there is negative packed data in the input file.

SOLUTION:

The patch detailed below corrects the problem.

NOTE

There are two versions of this patch: version "A" applies to the BASIC-PLUS-2 source form of RPGDCV (installed by RPGGEN.CTL), and version "B" applies to the MACRO-11 source form of RPGDCV (installed by RPGNB2.CTL).

PROCEDURE:

1. For purposes of the discussion, we will assume that the RPGDCV source file is located on the public disk structure. In the patching procedure, we will, therefore, refer to that file by its simplest form: either RPGDCV.B2S or RPGDCV.MAC. If the file is not available as assumed, you should replace all of the file references according to the requirements of your installation.

   Also, for purposes of presenting the patching procedure, we assume that the patching procedure will be performed in a privileged account, and that any other necessary files (RPGDCV.CMD and RPGDCV.ODL for the MACRO-11 version) are located in that account.

2. The command files for this patch appear in patch kit version "D" or later. (The BASIC-PLUS-2 version is in patch kit version "C".) If you do not have that distribution, you can produce a command file by specifying a file for [logfile=] in the procedure below.

   To apply the patch manually, perform the following RSTS/E system commands.

A - BASIC-PLUS-2

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGDCV.B2S=RPGDCV.B2S<cr>
#[logfile=]<cr>
*H/EDIT 02/V<cr>
1!**<tab>RPGDCV<tab><tab>VERSION 2<tab>EDIT 02<tab><tab>09-AUG-77<cr>
```

RPG II V8.02
for RSTS/E V6C
RPGDCV V2-02

Seq 32.6.1 M
2 of 4
Supersedes article dated Oct 78.

```
*-C/3/G/09-AUG-77/-9C/22-JUN-78/V<cr>
1!**<tab>RPGDCV<tab><tab>VERSION 2<tab>EDIT 03<tab><tab>22-JUN-78<cr>
*G/1977,/V<cr>
!****<tab>Copyright (C) 1975,1976,1977, &<cr>
*I/1978,/V<cr>
!****<tab>Copyright (C) 1975,1976,1977,1978, &<cr>
*H/V2-02/V<cr>
1030<tab>PRINT 'RPGDCV V2-02'<cr>
*-C/3/V<cr>
1030<tab>PRINT 'RPGDCV V2-03'<cr>
*H/2327<tab>/V<cr>
2327<tab>PRINT #2%,B2$<cr>
*-JKI<cr>
<tab>MOVE TO #2%, B2$\ PUT #2%<cr>
<esc>*V<cr>
2328<tab>PRINT #10%, D8$<cr>
*G/2328<tab>/-JKI<cr>
<tab>MOVE TO #10%, D8$\ PUT #10%<cr>
<esc>*V<cr>
2329<tab>IF P8%=2% THEN 8062 &<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

B - MACRO-11

```
RUN $CPATCH<cr>
<CPATCH's header line>

File to patch - RPGDCV.MAC=RPGDCV.MAC<cr>
#[logfile=]<cr>
*H/12848/V<cr>
<tab>.WORD<tab>12848<cr>
*-5C/13104/V<cr>
<tab>.WORD<tab>13104<cr>
*AL<cr>
<tab>.WORD<tab>$PDATA+40<cr>
*H/V2-02/V<cr>
<tab>RLI$M <tab>,$PDATA+20<tab>; "RPGDCV V2-02"<cr>
*-C/3/V<cr>
<tab>RLI$M <tab>,$PDATA+20<tab>; "RPGDCV V2-03"<cr>
*H/L2327:/V<cr>
L2327:<tab>MOI$IS<tab>,2<tab><tab>; #2<cr>
*AL<cr>
<tab>IPT$<tab><cr>
*G/IP/-C/M/V<cr>
<tab>IMT$<tab><cr>
*2AL<cr>
<tab>PVS$AI<tab>,0<tab><tab>; #0<cr>
```

RPG II V8.02
for RSTS/E V6C
RPGDCV V2-02

Seq 32.6.1 M
3 of 4
Supersedes article dated Oct 78.

```
*KI<cr>
<tab>MTS$  <tab><cr>
<esc>*V<cr>
<tab>EOL$<tab><cr>
*AI<cr>
<tab>MOI$IS<tab>,2<tab><tab>; #2<cr>
<tab>RPN$<tab><cr>
<esc>*AL<cr>
L2328:<tab>MOI$IS<tab>,10<tab><tab>; #10<cr>
*AL<cr>
<tab>IPT$<tab><cr>
*G/IP/-C/M/V<cr>
<tab>IMT$<tab><cr>
*2AL<cr>
<tab>PVS$AI<tab>,0<tab><tab>; #0<cr>
*KI<cr>
<tab>MTS$  <tab><cr>
<esc>*V<cr>
<tab>EOL$<tab><cr>
*AI<cr>
<tab>MOI$IS<tab>,10<tab><tab>; #10<cr>
<tab>RPN$<tab><cr>
<esc>*AL<cr>
L2329:<tab>CMI$MI<tab>,$IDATA+3048<tab>; P8%<cr>
*EX<cr>
Patch from KB:[P,PN]CPATCH.CMD complete
#^Z
File to patch - ^Z

Ready
```

3. To re-build the RPGDCV program and re-enter it into the system library, type the following RSTS/E commands.

A - BASIC-PLUS-2

```
RUN $BASIC2.TSK<cr>

<BASIC-PLUS-2's header line>


Basic2

OLD RPGDCV<cr>

Basic2

HISEG<cr>
Name--BP2COM<cr>
Account--LB:<cr>

Basic2
```

```
COMPILE/OBJ<cr>

Basic2

BUILD/SEQ<cr>

Basic2

RUN $TKB.TSK<cr>
TKB>@RPGDCV<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*$RPGDCV.TSK=RPGDCV.TSK<cr>
*=$RPGDCV.TSK<232>/RE<cr>
*^Z

Ready
```

B - MACRO-11

```
RUN $MAC.TSK<cr>
MAC>RPGDCV=RPGDCV<cr>
MAC>^Z

Ready

RUN $TKB.TSK<cr>
TKB>@RPGDCV<cr>
TKB>^Z

Ready

RUN $PIP.SAV<cr>
*=$RPGDCV.TSK<232>/RE<cr>
*^Z

Ready
```

4. You should now take whatever steps are necessary, according to your installation guidelines, to save the new version of the program.

5. The source (.B2S or .MAC) version of the program and other files used during the patching procedures should now be removed from the public structure.

BASIC-PLUS-2 V1.50 Seq 38.2.1 M
RSTS/E V06C-03
BASIC2 Compiler Patches Page 1 of 1

SOME MIXED MODE ASSIGNMENT STATEMENTS GENERATE NO ERRORS - MANDATORY BASIC2 COMPILER PATCH

PROBLEM:

An illegal assignment statement of the form "A = B$" does not generate an error message, while the compiler also does not generate any code for the statement.

SOLUTION:

This mandatory patch to the BASIC2 Compiler V1.50 will cure the problem. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch? $BASIC2.TSK
File found in account [1,2]
Base address? 103:52042-27204
Offset address? 7532
Base    Offset  Old     New?
??????  007532  162262  ? 13466
??????  007534  075620  ? 13466
??????  007536  017250  ? 13466
??????  007540  162256  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. The compiler is now ready for use.

BASIC-PLUS-2 V1.50 Seq 38.2.2 M
RSTS/E V06C-03
BASIC2 Compiler Patches Page 1 of 1

THE COMPILER EXPANSION OF A SYSTEM WIDE LOGICAL DEVICE NAME IS INCORRECT - MANDATORY BASIC2 COMPILER PATCH

PROBLEM:

When specifying a system wide logical device name for a file, the compiler expands it to DEV:(N,M) instead of DEV:[N,M].

SOLUTION:

This mandatory patch to the BASIC2 Compiler V1.50 will cure the problem. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch? $BASIC2.TSK
File found in account [1,2]
Base address? 32:73414-27204
Offset address? 3106
Base    Offset  Old     New?
??????  003106  000050  ? 133
??????  003110  076530  ? ^Z
Offset address? 3114
Base    Offset  Old     New?
??????  003114  000051  ? 135
??????  003116  076536  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. The compiler is now ready for use.

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Run-Time System Patches

Seq 38.3.1 M

*** Supercedes Patch 38.3.1 M Oct. ***

NAME AS STATEMENT DOES NOT WORK PROPERLY, AND MAGTAPE (BACKSPACE) FUNCTION DOES NOT WORK PROPERLY - MANDATORY BASIC2 PATCH

PROBLEM:

The NAME AS statement can cause an "?Illegal file name" error to occur. The MAGTAPE(BACKSPACE) function can cause a "?User data error on device at line ..." error to occur.

SOLUTION:

This mandatory patch to the Run-Time System for BASIC-PLUS-2 V1.5Ø will cure the problem. It must be installed in versions (EIS, FIS). There is a NEW PATCH for FPU in November Software Dispatch article 38.3.9 M.

This patch is the counterpart to Article 38.6.1 for this component. The command file for this patch appears in patch kit version "D" or later.

PROCEDURE:

1. INSTALL THE FOLLOWING PATCH USING THE ONLPAT PROGRAM SUPPLIED ON THE DISTRIBUTION MEDIA:

```
COMMAND FILE?  <CR>
FILE TO PATCH?  [Ø,1]BASIC2.RTS
Base address? NMA$
Offset address? 4
 Base    Offset  Old      New?
??????  ØØØØØ4  ØØ4767  ? 137
??????  ØØØØØ6  166614  ? PATCH
??????  ØØØØ1Ø  Ø127Ø3  ? ^Z
Offset address? 26
Base    Offset  Old      New?
??????  ØØØØ26  ØØ4767  ? ØØØ24Ø
??????  ØØØØ3Ø  Ø171Ø4  ? ØØØ24Ø
??????  ØØØØ32  Ø1Ø2ØØ  ? ØØØ24Ø
??????  ØØØØ34  Ø1Ø3Ø1  ? ØØØ24Ø
??????  ØØØØ36  ØØ4767  ? ^Z
Offset address? 176
Base    Offset  Old      New?
??????  ØØØ176  Ø126Ø3  ? 4737
??????  ØØØ2ØØ  ØØØ3Ø3  ? $CLXRB
??????  ØØØ2Ø2  152603  ? 112663
??????  ØØØ2Ø4  Ø12637  ? 7
```

```
??????  000206  000444  ? 112663
??????  000210  012602  ? 6
??????  000212  004767  ? 106363
??????  000214  002504  ? 6
??????  000216  013746  ? 137
??????  000220  000444  ? PATCH+34
??????  000222  000134  ? 240
??????  000224  004767  ? ^Z
Offset address? ^Z
Base address? PATCH
Offset address? 0
 Base   Offset  Old     New?
??????  000000  000000  ? 4737
??????  000002  000000  ? $GTR23
??????  000004  000000  ? 10246
??????  000006  000000  ? 10346
??????  000010  000000  ? 4737
??????  000012  000000  ? $FSSCN
??????  000014  000000  ? 12601
??????  000016  000000  ? 12600
??????  000020  000000  ? 137
??????  000022  000000  ? NMA$+10
??????  000024  000000  ? ^Z
Offset address? 34
 Base   Offset  Old     New?
??????  000034  000000  ? 12663
??????  000036  000000  ? 2
??????  000040  000000  ? 12613
??????  000042  000000  ? 104014
??????  000044  000000  ? 4737
??????  000046  000000  ? $IOTST
??????  000050  000000  ? 13746
??????  000052  000000  ? 444
??????  000054  000000  ? 134
??????  000056  000000  ? ^Z          (CTRL/Z to exit)
```

2. REPLACE THE RTS USING THE UTILTY PROGRAM AS FOLLOWS:

```
RUN $UTILTY

#UNLOAD BASIC2
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Compiler Patches

Seq 38.2.4 M
Page 1 of 2

OPTIMIZATION OF CONSTANTS CAN CAUSE ERRORS - MANDATORY BASIC2 COMPILER PATCH

PROBLEM:

The optimization of constants within expressions may erroneously leave a word on the compiler's pseudo stack. This problem can manifest itself with the compiler error, "Stack error in CDGEN", or with the run-time errors, "Memory Management Violation" and "Unibus timeout".

SOLUTION:

This mandatory patch to the BASIC2 Compiler V1.5Ø will cure the problem. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch? $BASIC2.TSK
File found in account [1,2]
Base address? 352:35470-27610
Offset address? 2746
Base     Offset  Old      New?
??????  ØØ2746  Ø4Ø514  ? 37Ø5Ø
??????  ØØ275Ø  162256  ? ^Z
Offset address? 3622
Base     Offset  Old      New?
??????  ØØ3622  Ø41370  ? 3717Ø
??????  ØØ3624  162256  ? ^Z
Offset address? 4764
 Base    Offset  Old      New?
??????  ØØ4764  161646  ? 16Ø226
??????  ØØ4766  Ø74356  ? 427Ø6
??????  ØØ477Ø  Ø26722  ? ^Z
Offset address? 5362
 Base    Offset  Old      New?
??????  ØØ5362  Ø43140  ? 37Ø5Ø
??????  ØØ5364  162256  ? ^Z
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Compiler Patches


```
Offset address? 6370
 Base   Offset  Old      New?
??????  ØØ6370  161646   ? 160226
??????  ØØ6372  Ø74356   ? 44214
??????  ØØ6374  Ø26722   ? ^Z
Offset address? 6534
 Base   Offset  Old      New?
??????  ØØ6534  Ø4435Ø   ? 37170
??????  ØØ6536  162256   ? ^Z
Offset address? 10436
 Base   Offset  Old      New?
??????  Ø10436  161646   ? 160226
??????  Ø10440  Ø74356   ? 463Ø4
??????  Ø10442  Ø26726   ? ^Z
Offset address? 20222
 Base   Offset  Old      New?
??????  Ø20222  ØØØØ12   ? 144
??????  Ø20224  Ø74374   ? ^Z
Offset address? 2Ø234
 Base   Offset  Old      New?
??????  Ø20234  ØØØØ12   ? 144
??????  Ø20236  Ø74306   ? ^Z
Offset address? ^Z
Base address? ^Z                        (CTRL/Z to exit)
```

2. The compiler is now ready for use.

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Run-Time System Patches

Seq 38.3.5 M
Page 1 of 1

A NEGATIVE INDEX IN AN ON GOTO STATMENT CAN CAUSE A PROGRAM CRASH - MANDATORY BASIC2 PATCH

PROBLEM:

If an ON GOTO statement contains a negative index, the program can terminate abnormally.

SOLUTION:

This mandatory patch to the BASIC2 Run-Time System for V1.5Ø will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the RTS. This patch is the counterpart to Articles 38.4.2 M and 38.6.5 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch? BASIC2.RTS
File found in account [Ø,1]
Base address? GSU$
Offset address? 52
Base    Offset  Old     New?
??????  ØØØØ52  ØØ14Ø6  ? 3406
??????  ØØØØ54  Ø2Ø114  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. Replace the RTS using the UTILTY program as follows:

```
RUN $UTILTY

#UNLOAD BASIC2
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.50 Seq 38.3.6 M
RSTS/E V06C-03
BASIC2 Run-Time System Patches Page 1 of 1

SGN FUNCTION DOES NOT WORK PROPERLY UNDER DOUBLE PRECISION - MANDATORY BASIC2 PATCH

PROBLEM:

In most expressions containing the SGN function on the right hand side of the operand under double precision, the resulting value of the expression will be erroneous, frequently zero. Occasionally such an expression can result in a Memory Management Violation.

SOLUTION:

This mandatory patch to the BASIC2 Run-Time System for V1.50 will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the RTS. This patch is the counterpart to Article 38.6.6 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file? <CR>
File to patch? BASIC2.RTS
File found in account [0,1]
Base address? SGD$
Offset address? 72
Base    Offset  Old     New?
??????  000072  000062  ? 000064
??????  000074  001401  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. Replace the RTS using the UTILTY program as follows:

```
RUN $UTILTY

#UNLOAD BASIC2
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Run-Time System Patches

Seq 38.3.7 M
Page 1 of 2

A NULL STRING PASSED TO A SUBPROGRAM WILL NOT BE UPDATABLE - MANDATORY BASIC2 PATCH

PROBLEM:

If a null string is passed to a subprogram as an actual parameter, and then an attempt is made to change the string, the string will not be updated.

SOLUTION:

This mandatory patch to the Run-Time System for V1.5Ø will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the RTS. This patch is the counterpart to Articles 38.4.3 M and 38.6.7 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch? BASIC2.RTS
File found in account [Ø,1]
Base address? MOS$AS
Offset address? 226
Base    Offset  Old     New?
??????  ØØØ226  Ø137Ø1  ? 137
??????  ØØØ23Ø  ØØØØ52  ? PATCH+56
??????  ØØØ232  Ø261Ø3  ? ^Z
Offset address? ^Z
Base address? PATCH
Offset address? 56
Base    Offset  Old     New?
??????  ØØØØ56  ØØØØØØ  ? 1ØØ2
??????  ØØØØ6Ø  ØØØØØØ  ? 137
??????  ØØØØ62  ØØØØØØ  ? MOS$AS+43Ø
??????  ØØØØ64  ØØØØØØ  ? 13Ø1
??????  ØØØØ66  ØØØØØØ  ? 52
??????  ØØØØ7Ø  ØØØØØØ  ? 137
??????  ØØØØ72  ØØØØØØ  ? MOS$AS+232
```

```
??????  000074  000000  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. Replace the RTS using the UTILTY program as follows:

```
RUN $UTILTY

#UNLOAD BASIC2
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Run-Time System Patches

Seq 38.3.8 M
Page 1 of 2

MODE 8 PROCESSING DOES NOT WORK PROPERLY - MANDATORY BASIC2 PATCH

PROBLEM:

Mode 8 file processing does not clear the current block number.

SOLUTION:

This mandatory patch to the Run-Time System for V1.5Ø will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the RTS. This patch is the counterpart to Article 38.6.8 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file?  <CR>
File to patch? BASIC2.RTS
File found in account [Ø,1]
Base address? RST$
Offset address? 236
Base    Offset  Old     New?
??????  ØØØ236  ØØ4767  ? 137
??????  ØØØ24Ø  176252  ? PATCH+74
??????  ØØØ242  ØØØ2Ø7  ? ^Z
Offset address? ^Z
Base address? PATCH
Offset address? 74
Base    Offset  Old     New?
??????  ØØØØ74  ØØØØØØ  ? 4737
??????  ØØØØ76  ØØØØØØ  ? $FLSAL
??????  ØØØ1ØØ  ØØØØØØ  ? 5Ø6Ø
??????  ØØØ1Ø2  ØØØØØØ  ? 142
??????  ØØØ1Ø4  ØØØØØØ  ? 5Ø6Ø
??????  ØØØ1Ø6  ØØØØØØ  ? 144
??????  ØØØ11Ø  ØØØØØØ  ? 2Ø7
??????  ØØØ112  ØØØØØØ  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. Replace the RTS using the UTILTY program as follows:

```
RUN $UTILTY

#UNLOAD BASIC2
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASIC2 Run-Time System Patches

NAME AS STATEMENT DOES NOT WORK PROPERLY, AND MAGTAPE (BACKSPACE) FUNCTION DOES NOT WORK PROPERLY - MANDATORY BASIC2 PATCH

PROBLEM:

The NAME AS statement can cause an "?Illegal file name" error to occur. The MAGTAPE(BACKSPACE) function can cause a "?User data error on device at line ..." error to occur.

SOLUTION:

This mandatory patch to the Run-Time System for BASIC-PLUS-2 V1.5Ø will cure the problem. It must be installed in FPU versions.

This patch is the counterpart to Article 38.6.1 for this component. The command file for this patch appears in patch kit version "D" or later.

PROCEDURE:

1. INSTALL THE FOLLOWING PATCH USING THE ONLPAT PROGRAM SUPPLIED ON THE DISTRIBUTION MEDIA:

```
COMMAND FILE?  <CR>
FILE TO PATCH?  [Ø,1]BASIC2.RTS
Base address? NMA$
Offset address? 4
 Base   Offset  Old     New?
??????  ØØØØØ4  ØØ4767  ? 137
??????  ØØØØØ6  166614  ? PATCH
??????  ØØØØ1Ø  Ø12703  ? ^Z
Offset address? 26
Base    Offset  Old     New?
??????  ØØØØ26  ØØ4767  ? ØØØ24Ø
??????  ØØØØ3Ø  Ø17Ø6Ø  ? ØØØ24Ø
??????  ØØØØ32  Ø1Ø2ØØ  ? ØØØ24Ø
??????  ØØØØ34  Ø1Ø3Ø1  ? ØØØ24Ø
??????  ØØØØ36  ØØ4767  ? ^Z
Offset address? 176
Base    Offset  Old     New?
??????  ØØØ176  Ø126Ø3  ? 4737
??????  ØØØ2ØØ  ØØØ3Ø3  ? $CLXRB
??????  ØØØ2Ø2  152Ø63  ? 112663
??????  ØØØ2Ø4  Ø12637  ? 7
```

```
??????  000206  000444  ? 112663
??????  000210  012602  ? 6
??????  000212  004767  ? 106363
??????  000214  002504  ? 6
??????  000216  013746  ? 137
??????  000220  000444  ? PATCH+34
??????  000222  000134  ? 240
??????  000224  004767  ? ^Z
Offset address? ^Z
Base address? PATCH
Offset address? 0
 Base   Offset  Old     New?
??????  000000  000000  ? 4737
??????  000002  000000  ? $GTR23
??????  000004  000000  ? 10246
??????  000006  000000  ? 10346
??????  000010  000000  ? 4737
??????  000012  000000  ? $FSSCN
??????  000014  000000  ? 12601
??????  000016  000000  ? 12600
??????  000020  000000  ? 137
??????  000022  000000  ? NMA$+10
??????  000024  000000  ? ^Z
Offset address? 34
 Base   Offset  Old     New?
??????  000034  000000  ? 12663
??????  000036  000000  ? 2
??????  000040  000000  ? 12613
??????  000042  000000  ? 104014
??????  000044  000000  ? 4737
??????  000046  000000  ? $IOTST
??????  000050  000000  ? 13746
??????  000052  000000  ? 444
??????  000054  000000  ? 134
??????  000056  000000  ? ^Z          (CTRL/Z to exit)
```

2. REPLACE THE RTS USING THE UTILTY PROGRAM AS FOLLOWS:

```
RUN $UTILTY

#UNLOAD BASIC2
#^Z                                    (CTRL/Z to exit)
```

RSTS/E V06C-03
BASIC-PLUS-2 V1.50
BP2COM Run-Time System

SYSTEM SECURITY EXPOSURE WITH BASIC-PLUS-2 KEYBOARD MONITOR

PROBLEM:

When the BP2COM Run-Time System is a job's default Run-Time System, either by virtue of being the system's default Run-Time System or as a result of user having SWITCHed to it, it processes all Keyboard Monitor requests for that job. The Keyboard Monitor within the BP2COM Run-Time System, however, does not explicitly drop privileges before executing any commands. This presents a potentially serious system security exposure. If a non-privileged user runs a privileged program (which is allowed), and the program's Run-Time System is BP2COM, unless the program drops privileges before exiting to the Keyboard Monitor, the user will retain those privileges. The user could then run any program in the system, including all privileged programs.

SOLUTION:

The following mandatory patch will cause privileges to be dropped before a program running under the BP2COM Run-Time System exits to the Keyboard Monitor.

PROCEDURE:

1. The Run-Time System must be removed with the UTILTY program as follows:

```
RUN UTILTY
<UTILTY's header line>
#REMOVE BP2COM
#^Z                                          (CTRL/Z to exit)
```

2. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file? B04012=                        (Produces a permanent record)
File to patch? BP2COM.RTS
Base address? ..EXIT
Offset address? 56
 Base       Offset  Old     New?
??????      000056  000167  ? 137
??????      000060  000622  ? PATCH
??????      000062  104034  ? ^Z             (CTRL/Z for new offset)
Offset address? ^Z                           (CTRL/Z for new base)
Base address? PATCH
Offset address? 0
 Base       Offset  Old     New?
??????      000000  000000  ? 12737
??????      000002  000000  ? -1
??????      000004  000000  ? XRB
??????      000006  000000  ? .CLEAR
??????      000010  000000  ? 137
??????      000012  000000  ? ..NEW
??????      000014  000000  ? ^C             (Up-arrow/C to exit)
```

3. Add the RTS back using the UTILTY program as follows:

```
RUN $UTILTY
<UTILTY's header line>
#ADD BP2COM
#Z                                        (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BP2COM Run-Time System Patches

Seq 38.4.2 M
Page 1 of 1

A NEGATIVE INDEX IN AN ON GOTO STATEMENT CAN CAUSE A PROGRAM CRASH - MANDATORY BP2COM PATCH

PROBLEM:

If an ON GOTO statement contains a negative index, the program can terminate abnormally.

SOLUTION:

This mandatory patch to the BP2COM Run-Time System for V1.5Ø, along with the associated mandatory patch in Article 38.6.5 M, will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the RTS. This patch is the counterpart to Article 38.3.5 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file? <CR>
File to patch? BP2COM.RTS
File found in account [Ø,1]
Base address? GSU$
Offset address? 52
Base    Offset  Old     New?
??????  ØØØØ52  ØØ1406  ? 3406
??????  ØØØØ54  Ø2Ø114  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. Replace the RTS using the UTILTY program as follows:

```
RUN $UTILTY

#UNLOAD BP2COM
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.50 Seq 38.4.3 M
RSTS/E V06C-03
BP2COM Run-Time System Patches Page 1 of 2

A NULL STRING PASSED TO A SUBPROGRAM WILL NOT BE UPDATABLE - MANDATORY BP2COM PATCH

PROBLEM:

If a null string is passed to a subprogram as an actual parameter, and then an attempt is made to change the string, the string will not be updated.

SOLUTION:

This mandatory patch to the Run-Time System for V1.50, along with the associated patch in Article 38.6.7 M, will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the RTS. This patch is the counterpart to Article 38.3.7 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Install the following patch using the ONLPAT program supplied on the distribution media:

```
Command file? <CR>
File to patch? BP2COM.RTS
File found in account [0,1]
Base address? MOS$AS
Offset address? 226
Base    Offset  Old     New?
??????  000226  013701  ? 137
??????  000230  000052  ? PATCH+14
??????  000232  026103  ? ^Z
Offset address? ^Z
Base address? PATCH
Offset address? 14
Base    Offset  Old     New?
??????  000014  000000  ? 1002
??????  000016  000000  ? 137
??????  000020  000000  ? MOS$AS+430
??????  000022  000000  ? 13701
??????  000024  000000  ? 52
??????  000026  000000  ? 137
??????  000030  000000  ? MOS$AS+232
```

```
??????  000032  000000  ? ^Z
Offset address? ^Z
Base address? ^Z                (CTRL/Z to exit)
```

2. Replace the RTS using the UTILTY program as follows:

```
RUN $UTILTY

#UNLOAD BP2COM
#^Z                                    (CTRL/Z to exit)
```

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BP2COM Object Library Patches

A NEGATIVE INDEX IN AN ON GOTO STATEMENT CAN CAUSE A PROGRAM CRASH - MANDATORY BP2COM PATCH

PROBLEM:

If an ON GOTO statement contains a negative index, the program can terminate abnormally.

SOLUTION:

This mandatory patch to the object library (BP2COM.OLB) for V1.5Ø, along with the associated mandatory patch in Article 38.4.2 M, will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the library. This patch is the counterpart to Article 38.3.5 for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Build the following correction file using an editor and name it: CNTRL.COR

```
        .TITLE  $CNTRL
        .IDENT  /Ø5CMA/
.=.+52
        .WORD   3Ø6
        .END
```

2. Assemble the correction file as follows:

```
RUN $MAC.TSK
MAC>CNTRL.PAT,CNTRL.LIS=CNTRL.COR
MAC>^Z                                  (CTRL/Z to exit)
```

3. Extract the original module as follows:

```
RUN $LBR.TSK
LBR>CNTRL.OLD=LB:[1,1]BP2COM/EX:$CNTRL
LBR>^Z                                  (CTRL/Z to exit)
```

4. Run the patch utility to merge old module and correction:

```
RUN $PAT.TSK
PAT>CNTRL=CNTRL.OLD/CS:102121,CNTRL.PAT/CS:4230
PAT>^Z                                  (CTRL/Z to exit)
```

5. Replace patched module in library:

```
RUN $LBR.TSK
LBR>LB:[1,1]BP2COM/RP=CNTRL
LBR>^Z                                  (CTRL/Z to exit)
```

6. Re-TASK BUILD any programs that used this module.

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BP2COM Object Library Patches

Seq 38.6.6 M
Page 1 of 2

SGN FUNCTION DOES NOT WORK PROPERLY UNDER DOUBLE PRECISION - MANDATORY BP2COM PATCH

PROBLEM:

In most expressions containing the SGN function on the right hand side of the operand under double precision, the resulting value of the expression will be erroneous, frequently zero. Occasionally, such an expression can result in a Memory Management Violation.

SOLUTION:

This mandatory patch to the object library (BP2COM.OLB) for V1.5Ø will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the library. This patch is the counterpart to Article 38.3.6 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Build the following correction file using an editor and name it: EMISC.COR

```
        .TITLE  $EMISC
        .IDENT  /Ø4CMA/
.=.+72
        .WORD   64
        .END
```

2. Assemble the correction file as follows:

```
RUN $MAC.TSK
MAC>EMISC.PAT,EMISC.LIS=EMISC.COR
MAC>^Z                                  (CTRL/Z to exit)
```

3. Extract the original module as follows:

```
RUN $LBR.TSK
LBR>EMISC.OLD=LB:[1,1]BP2COM/EX:$EMISC
LBR>^Z                                  (CTRL/Z to exit)
```

4. Run the patch utility to merge old module and correction:

```
RUN $PAT.TSK
PAT>EMISC=EMISC.OLD/CS:32214,EMISC.PAT/CS:4Ø61
PAT>^Z                                    (CTRL/Z to exit)
```

5. Replace patched module in library:

```
RUN $LBR.TSK
LBR>LB:[1,1]BP2COM/RP=EMISC
LBR>^Z                                    (CTRL/Z to exit)
```

6. Re-TASK BUILD any programs that used this module.

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BP2COM Object Library Patches

Seq 38.6.7 M
Page 1 of 2

A NULL STRING PASSED TO A SUBPROGRAM WILL NOT BE UPDATABLE - MANDATORY BP2COM PATCH

PROBLEM:

If a null string is passed to a subprogram as an actual parameter, and then an attempt is made to change the string, the string will not be updated.

SOLUTION:

This mandatory patch to the object library (BP2COM.OLB) for V1.5Ø, along with the associated mandatory patch in Article 38.4.3 M, will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the library. This patch is the counterpart to Article 38.3.7 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Build the following correction file using an editor and name it: STMOS.COR

```
        .TITLE  $STMOS
        .IDENT  /13CMA/
$PC=.
.=$PC+226
        BR      PAT
.=$PC+61Ø
PAT:
        BEQ     $PC+43Ø
        MOV     @#52,R1
        BR      $PC+232
        .END
```

2. Assemble the correction file as follows:

```
RUN $MAC.TSK
MAC>STMOS.PAT,STMOS.LIS=STMOS.COR
MAC>^Z                                  (CTRL/Z to exit)
```

3. Extract the original module as follows:

```
RUN $LBR.TSK
LBR>STMOS.OLD=LB:[1,1]BP2COM/EX:$STMOS
LBR>^Z                                  (CTRL/Z to exit)
```

4. Run the patch utility to merge old module and correction:

```
RUN $PAT.TSK
PAT>STMOS=STMOS.OLD/CS:165206,STMOS.PAT/CS:6725
PAT>^Z                                  (CTRL/Z to exit)
```

5. Replace patched module in library:

```
RUN $LBR.TSK
LBR>LB:[1,1]BP2COM/RP=STMOS
LBR>^Z                                  (CTRL/Z to exit)
```

6. Re-TASK BUILD any programs that used this module.

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BP2COM Object Library Patches

MODE 8 PROCESSING DOES NOT WORK PROPERLY - MANDATORY BP2COM PATCH

PROBLEM:

Mode 8 file processing does not clear the current block number.

SOLUTION:

This mandatory patch to the object library (BP2COM.OLB) for V1.5Ø will cure the problem. It must be installed in all versions (EIS, FIS, and FPU) of the library. This patch is the counterpart to Article 38.3.8 M for this component. The command file for this patch appears in patch kit version E or later.

PROCEDURE:

1. Build the following correction file using an editor and name it: ICINI.COR

```
        .TITLE  $ICINI
        .IDENT  /16CMA/
$PC=.
.=$PC+242
        BR      PAT
.=$PC+316
PAT:
        CLR     142(RØ)
        CLR     144(RØ)
        RETURN
        .END
```

2. Assemble the correction file as follows:

```
RUN $MAC.TSK
MAC>ICINI.PAT,ICINI.LIS=ICINI.COR
MAC>^Z                                  (CTRL/Z to exit)
```

3. Extract the original module as follows:

```
RUN $LBR.TSK
LBR>ICINI.OLD=LB:[1,1]BP2COM/EX:$ICINI
LBR>^Z                                        (CTRL/Z to exit)
```

4. Run the patch utility to merge old module and correction:

```
RUN $PAT.TSK
PAT>ICINI=ICINI.OLD/CS:62234,ICINI.PAT/CS:6126
PAT>^Z                                        (CTRL/Z to exit)
```

5. Replace patched module in library:

```
RUN $LBR.TSK
LBR>LB:[1,1]BP2COM/RP=ICINI
LBR>^Z                                        (CTRL/Z to exit)
```

6. Re-TASK BUILD any programs that used this module.

BASIC-PLUS-2 V1.5Ø
RSTS/E VØ6C-Ø3
BASRMS Object Library Patches

Seq 38.7.2 M
Page 1 of 2

WRITING PAST PHYSICAL END OF MAGTAPE IS NOW TRAPPABLE - MANDATORY BASRMS PATCH

PROBLEM:

Writing past the physical end of magtape using RMS is reported with a non-trappable RMS error rather than with a trappable BP2 error.

SOLUTION:

This mandatory patch to the object library file (BASRMS.OLB) for BASIC-PLUS-2 V1.5Ø, along with the associated mandatory patch detailed in Article 38.7.1 M, will cure the problem. It must be installed in any version of the library (EIS, FIS, or FPU). The command file for this patch appears in patch kit version "D" or later.

PROCEDURE:

1. Build the following correction file using an editor and name it: IMALL.COR

```
        .TITLE  $IMALL
        .IDENT  /Ø6CMA/
$PC=.
.=$PC+42
        JMP     PATCH
.=$PC+114
PATCH:  MOV     #$IMERR,2(SP)
        MOV     14(RØ),R2
        JMP     $PC+66
        .END
```

2. Assemble the correction file as follows:

```
RUN $MAC.TSK
MAC>IMALL.PAT,IMALL.LIS=IMALL.COR
MAC>^Z                                          (CTRL/Z to exit)
```

3. Extract the original module as follows:

```
RUN $LBR.TSK
LBR>IMALL.OLD=LB:[1,1]BASRMS/EX:$IMALL
LBR>^Z                                          (CTRL/Z to exit)
```

4. Run the patch utility to merge old module and correction:

```
RUN $PAT.TSK
PAT>IMALL=IMALL.OLD/CS:24717,IMALL.PAT/CS:6777
PAT>^Z                                          (CTRL/Z to exit)
```

5. Replace patched module in library:

```
RUN $LBR.TSK
LBR>LB:[1,1]BASRMS/RP=IMALL
LBR>^Z                                          (CTRL/Z to exit)
```

6. Re-TASK BUILD any programs that used this module.

RSTS/E V6C
CUMULATIVE INDEX
NOVEMBER 1978

This is a complete listing of all articles for RSTS/E V6C and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Retracted articles are indicated: RETRACTION.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory patch. These are critical patches which each customer is required to install.

O = Optional patch. These articles are applicable only if the reported problems have occurred at the customer site or if they are unique to his operation.

R = Restriction. These problems are not patchable in released software. Restrictions are reviewed and corrected when possible as part of the normal release cycle.

N = Note. This information may be helpful to the user.

* = Articles appeared in RSTS/E Release Notes, December 1977 (AA-5246B-TC).

+ = Articles appeared in RSTS/E Software Dispatch Review, January 1978 (AA-5514B-TC).

Component	Sequence	Mon/Yr
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MAKING RECEIVER DECLARATION NON-PRIVILEGED	3.1.1 O*	Dec 77
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AUXILIARY LIBRARY ACCOUNTS	3.5.1 O*	Dec 77
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CORRECT PROBLEM WITH /B SWITCH ON A RUN ENTRY	11.3.1 M	Jun 78
EDITCH		
CHANGING THE EFFECT OF THE POSITION COMMAND	11.4.1 O*	Dec 77
EDIT FAILS TO READ NON-DISK FILES	11.4.2 M	Jul 78
FILCOM		
FILCOM FAILS TO COMPARE NON-DISK FILES	11.5.1 M	Jul 78
FLINT		
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PIPEXT		
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BATCH CANNOT DETECT PIPEXT ERROR MESSAGES	11.8.2 M	Oct 78
RUNOFF		
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PMDUMP		
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FLX		
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ERRDET		
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MAGTAPE OUTPUT HANDLED INCORRECTLY	12.5.2 M	Oct 78
BACKUP PACKAGE		
BACKUP		
BACKUP PACKAGE HELP FILE CORRECTION	13.1.1 O	Mar 78
SYSTEM BACKUP SHOULD BE DONE REGULARLY	13.1.2 N	Nov 78
BACCOM		
UNNECESSARY TAPE USAGE ON RESTORE	13.2.1 M	Apr 78
PROBLEM WITH LARGE DISK BACKUP VOLUMES	13.2.2 M	Nov 78
BACCON		
FIX TO SEND OFFLINE TO OPSER IF DETACHED	13.3.1 M	Apr 78
BACCON INCORRECTLY DEASSIGNS THE LISTING DEVICE	13.3.2 M	Jul 78
BACDIR		
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PROBLEM IN RECEIVING MESSAGES FROM OPSER	13.5.2 M	Aug 78
PROBLEM WITH FILE SELECTION BASED ON TIME OF CREATION	13.5.3 M	Aug 78
BACDSK		
INCORRECT COMPUTATION OF BACKUP VOLUME BAD CLUSTERS	13.7.1 M	Nov 78
BACENT		
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BACFRM		
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PROBLEM WITH LARGE DISK BACKUP VOLUMES	13.11.1 M	Nov 78
BACLST		
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BACMNT		
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OPSRUN SLEEPS FOR A FIXED AMOUNT OF TIME	14.3.2 M	Aug 78
QUE		
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QUE DOES NOT CHECK PRIVILEGE PROPERLY	14.4.3 M	Apr 78
ILLEGAL DEVICE UNIT NUMBER ERROR	14.4.4 M	May 78
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QUMRUN SLEEPS FOR A FIXED AMOUNT OF TIME	14.6.2 M	Aug 78
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SPLRUN		
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BATDEC		
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BATCH JOB DOES NOT ALWAYS RETURN TO THE DEFAULT RTS	14.14.3 M	Mar 78
TABS AND SPACES ARE TRUNCATED IN DATA LINES	14.14.4 M	Mar 78
$JOB [P,PN] MUST BE A VALID SYSTEM ACCOUNT	14.14.5 M	Apr 78
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"$" AS A SPECIAL CHARACTER ONLY IF FIRST CHARACTER OF LINE	14.14.7 O	Aug 78
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BATRUN		
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$EOJ DOES NOT RESET ERROR CONDITION	14.15.2 O	Feb 78
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ACCTST IGNORES RM03 DISKS WHEN CHECKING SYSTEM CAPACITY	15.3.1 M	Jul 78
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AC4TST FAILS TO EXERCISE RM03 DISKS	15.8.1 M	Jul 78

Component	Sequence	Mon/Yr
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AC5TST FAILS TO EXERCISE RM03 DISKS	15.9.1 M	Jul 78
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OVERLAID TASKS ABORT WHEN BUILT WITH UNITS=14	21.7.4 M	Aug 78
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PIP.SAV		
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DMSRAA		
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DIBOL-11/DECFORM V1

#Articles appeared in CTS-500 DIBOL Release Notes, July 1977 (DEC-11-LCDAA-A-D).

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BASIC-PLUS-2

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THE THREAD MA1$ IS NOT IN THE RUN TIME SYSTEM	27.3.35 M	Aug 78
SIGN FUNCTION (SGN) NOT RETURNING CORRECT VALUES	27.3.36 M	Aug 78
BP2COM RUN-TIME SYSTEM PATCHES		
USE OF BP2COM RTS MAY GIVE TASK BUILDER ERRORS	27.4.1 M*	Dec 77
POSSIBLE UNIBUS TIMEOUT FATAL ERRORS ON STRING EQUATES	27.4.2 M*	Dec 77
ERROR TRAPPING OUT OF STRING FUNCTION GIVES MEMORY MANAGEMENT VIOLATION	27.4.3 M*	Dec 77
DEVICE "TI:" NOT PROPERLY HANDLED	27.4.4 M*	Dec 77
CHANGING PROMPT FOR BP2COM WHEN DEFAULT RUN-TIME SYSTEM	27.4.5 O	Dec 77
CHAINING TO A BASIC-PLUS PROGRAM FROM BASIC-PLUS-2 MAY RESULT IN SCALE FACTOR INTERLOCK	27.4.6 M*	Dec 77
ILLEGAL FILENAME MAY NOT GIVE ERROR	27.4.7 M	Jan 78
BP2COM FAILS TO CHAIN TO INIT AT START-UP	27.4.8 O	Jan 78
STACK OVERFLOW ERRORS WHEN BP2COM IS DEFAULT RTS	27.4.9 M	Mar 78
CONTROL C OUT OF BP2COM GIVES ERRORS	27.4.11 M	Oct 78
SYSTEM SECURITY EXPOSURE WITH BASIC-2-PLUS KEYBOARD MONITOR	27.4.12 M	Nov 78
BASIC2 OBJECT LIBRARY PATCHES		
DEBUG MAY IGNORE BREAK IN USER FUNCTION	27.5.1 M*	Dec 77
AN ATTEMPT TO USE A SUBSCRIPT OUT OF RANGE IN DEBUG WILL GIVE MEMORY MANAGEMENT ERRORS	27.5.2 M*	Dec 77
MEMORY MANAGEMENT VIOLATION ON MATRIX INVERSION	27.5.3 M	Jan 78
KEYED GETS WITH STRING EXPRESSIONS GIVE ERRORS	27.5.4 M	Mar 78
UNDEFINED SYMBOL WHEN USING RESTORE	27.5.5 M	May 78
THE THREAD MA1$ IS NOT IN THE RUN TIME SYSTEM	27.5.6 M	Aug 78
UPDATE DOES NOT CORRECTLY SET RECORDSIZE	27.5.7 M	Oct 78
BP2COM OBJECT LIBRARY PATCHES		
POSSIBLE UNIBUS TIMEOUT FATAL ERRORS ON STRING EQUATES	27.6.1 M*	Dec 77
POSSIBLE UNIBUS TIMEOUT FATAL ERRORS ON PRINT-USINGS	27.6.2 M*	Dec 77
CLOSING A WRITE LOCKED OR HUNG DEVICE RESULTS IN A LOOP	27.6.3 M*	Dec 77
ERROR TRAPPING OUT OF STRING FUNCTION GIVES MEMORY MANAGEMENT VIOLATION	27.6.4 M*	Dec 77
LARGE TERMINAL WIDTHS PRODUCE FATAL ERRORS	27.6.5 M*	Dec 77
DEBUG MAY IGNORE BREAK IN USER FUNCTION	27.6.6 M	Jan 78
AN ATTEMPT TO USE A SUBSCRIPT OUT OF RANGE IN DEBUG WILL GIVE MEMORY MANAGEMENT ERRORS	27.6.7 M	Jan 78
UNQUOTED STRINGS OR "&" AT END OF DATA STATEMENTS CAUSE READ ERRORS	27.6.8 M	Jan 78
POSSIBLE BAD DATA IF VIRTUAL ARRAY READ CAUSES ERROR	27.6.9 M	Jan 78

Component	Sequence	Mon/Yr
PRINT USING IGNORES TRAILING ASTERISK	27.6.10 M	Jan 78
MEMORY MANAGEMENT VIOLATION ON MATRIX INVERSION	27.6.11 M	Jan 78
PRINT USING RETURNS ERROR INDICATOR FOR NEGATIVE NUMBERS	27.6.12 M	Jan 78
AN OPEN OF THE TERMINAL IGNORES ACTUAL WIDTH	27.6.13 M	Jan 78
NUM$ WITH SCALING CAUSES MEMORY ERRORS	27.6.14 M	Jan 78
VAL FUNCTION IGNORES SCALE FACTOR	27.6.15 M	Jan 78
RND DOES NOT RETURN TRULY RANDOM NUMBERS	27.6.16 M	Feb 78
INTEGER EXPONENTIATE MAY GIVE OVERFLOW ERROR	27.6.17 M	Feb 78
USE OF MODE A% CLAUSE IN OPEN CHANGES VALUE OF A%	27.6.18 M	Feb 78
FILE STRING SCAN (SYS(-10)) REPORTS ERRORS INCORRECTLY	27.6.19 M	Feb 78
RMS OPENS WITH SCALING MAY CAUSE ERRORS	27.6.20 M	Feb 78
INTEGER ARGUMENTS MAY GIVE MEMORY ERRORS	27.6.21 M	Feb 78
FORCING 'SHUTUP' SYS CALL TO CLOSE CHANNEL 15	27.6.22 M	Feb 78
'E' FORMAT WITH SCALING INPUTTED ERRONEOUSLY	27.6.23 M	Feb 78
CHAIN DROPS PRIVILEGES	27.6.24 M	Feb 78
ALLOWING 24 HOUR TIME OPTION	27.6.25 O	Mar 78
SCALED ARITHMETIC LOSES ACCURACY	27.6.26 M	Mar 78
CERTAIN UNTRAPPABLE ERRORS SHOULD NOT BE	27.6.27 M	Mar 78
KEYED GETS WITH STRING EXPRESSIONS GIVE ERRORS	27.6.28 M	Mar 78
SINGLE ALPHA CHARACTERS WRONGLY ACCEPTED AS NUMERIC	27.6.29 M	May 78
UNASSIGNED	27.6.30	XXX XX
NUM1$(SINGLE PRECISION) MAY GIVE STRANGE RESULTS	27.6.31 M	May 78
CHANNEL 15 NOT CLOSED ON ATTACH SYS CALL	27.6.32 M	May 78
XLATE FUNCTION DOES NOT WORK PROPERLY	27.6.33 M	Aug 78
RANDOMIZE DOES NOT WORK PROPERLY	27.6.34 M	Aug 78
THE THREAD MA1$ IS NOT IN THE RUN TIME SYSTEM	27.6.35 M	Sep 78
SIGN FUNCTION (SGN) NOT RETURNING CORRECT VALUES	27.6.36 M	Aug 78
UPDATE DOES NOT CORRECTLY SET RECORDSIZE	27.6.37 M	Nov 78
BASRMS OBJECT LIBRARY PATCHES		
SCRATCH STATEMENT PRODUCES UNIBUS TIMEOUT ERRORS	27.7.1 M*	Dec 77
FILE ACTIVITY AFTER AN INDEXED OPEN MAY PRODUCE CERTAIN RMS ERRORS	27.7.2 M*	Dec 77
SCQUENTIAL VARIABLE RECORDS WITH ODD LENGTHS CAUSE ERRORS	27.7.3 M	Jan 78

COBOL-11 V3

PACKAGE NOTES		
ACCEPT STATEMENT	28.1.1 N+	Jan 78
LISTING FILES	28.1.2 N+	Jan 78
PIP CANNOT PROCESS LISTING FILES	28.1.3 N+	Jan 78
PROBLEM LIST	28.1.4 N+	Jan 78
REDUCED CONTENTION	28.1.5 N	Mar 78
COMMENT AFTER COPY	28.1.6 R	Mar 78
COPY STATEMENT	28.1.7 R	Mar 78
LUN ASSIGNMENTS FROM MACRO	28.1.8 N	May 78
ENVIRONMENT DIVISION ERRORS	28.1.9 R	May 78
COMPILER		
ABORT WHEN READING 88 LEVEL ITEM	28.2.1 M	Feb 78
START WITH RELATIVE FILES	28.2.2 M	Feb 78
FINAL STATEMENT "EXIT PROGRAM"	28.2.3 R	Mar 78
ACCEPTING CBL PROG.CBL	28.2.4 R	Mar 78
FORMAT PROGRAMS	28.2.5 R	Mar 78
COPY STATEMENT/COMMENT LINE	28.2.6 R	Mar 78
"BLANK WHEN ZERO" CLAUSE	28.2.8 R	May 78
DEFINING TOO MANY SYMBOLS	28.2.9 R	Mar 78
CALL STATEMENT MAY TERMINATE	28.2.10 N	Apr 78
UNSTRING STATEMENT	28.2.11 N	Apr 78
OBJECT LIBRARY		
OVERLAY SEGMENTATION WITH SUBROUTINES	28.3.1 M	Feb 78
IMPROPER TEST OF SIGNED SUBORDINATE DATA ITEM	28.3.2 M	Feb 78
USE PROCEDURE FAILURE	28.3.3 M	Feb 78
ACCEPT OVERWRITES	28.3.4 R	Feb 78
MULTITERMINAL SUPPORT ROUTINE "KBREAD"	28.3.5 N	Feb 78
ODL		
BUILDING COBOL-11	28.4.1 M+	Jan 78
PROGRAM USING SORT	28.4.2 R	Apr 78
DOCUMENTATION		
PDP-11 COBOL USER'S GUIDE		
REWRITING RECORDS	28.7.1 N	**Mar 78**

Component	Sequence	Mon/Yr
RMS-11 V1.5		
PACKAGE NOTES		
GARBAGE IN BUFFER	29.1.1 N	May 78
CURRENT ODL OF CNVBLD.ODL WILL CAUSE STACK OVERFLOW	29.1.2 M	Sep 78
RMS11.RTS		
GLUN DIRECTIVE NOT CHECKING FOR UNASSIGNED LUNS	29.2.1 M	Jul 78
OVERLAID TASKS ABORT WHEN BUILT WITH UNITS=14	29.2.2 M	Aug 78
RMSLIB.OLB		
RMS-11 FILE SPECIFICATION	29.4.1 M	Aug 78
TWO OR MORE TASKS RUNNING AT DIFFERENT PRIORITY LEVELS	29.4.2 M	Oct 78
RMSUTL.OLB		
RESTORING LARGE FILES	29.6.1 M	Jul 78
ERROR OCCURRED WHEN USING RMS UTILITIES	29.6.2 N	Aug 78
RMS-11K V1.5		
PACKAGE NOTES		
RMS-11K SOFTWARE PERFORMANCE REPORTING SERVICES	29.11.1 N	Jul 78
RMS-11K MACRO PROGRAMS ENCOUNTERING AN ER$DME ERROR	29.11.2 N	Jul 78
RMSLIB.OLB		
RMS-11 FILE SPECIFICATION	29.14.1 M	Aug 78
IF (RML) OF A KEY IS GREATER THAN 127, IT IS SET INCORRECTLY	29.14.2 M	Aug 78
RMS-11 INDEXED FILE	29.14.3 M	Aug 78
UPDATE OPERATION IS PERFORMED ON A MULTI-KEY ISAM FILE	29.14.4 M	Sep 78
RMSUTL.OLB		
DFN MAY DEFAULT TO WRONG VALUES	29.16.1 M	Jul 78
INTERACTIVE DEFINE (DEF) UTILITY	29.16.2 M	Aug 78
SORT-11 V2		
SORT UTILITY		
ERROR WITH SORT SUBROUTINES	30.2.1 M	Aug 78
ALTSEQ LINE IN SPECIFICATION FILE IS NOT ACCEPTED	30.2.2 M	Nov 78
RSTS/E DECNET/E PACKAGE		
UTILITIES		
NCP		
NCP ALLOWS INVALID NODE ADDRESS IN DEFINE NODE COMMAND	31.2.1 M	Jul 78
NCU		
NCU DOES NOT CORRECTLY HANDLE DETECTION OF ANOTHER NCU	31.3.1 M	Jun 78
NCU DOES NOT CORRECTLY SET ITS RUN BURST AND PRIORITY	31.3.2 M	Oct 78
TLK		
TLK DOES NOT CHECK TO SEE IF LSN JOB NUMBER EXISTS	31.4.1 M	Jul 78
NCROOT		
NODE NAMES OF LESS THAN 6 CHARACTERS NOT ACCEPTED	31.8.1 M	Apr 78
NETCPY DOES NOT ALLOW COPIES BETWEEN MM: AND MT:	31.8.2 M	Jul 78
NFT		
NFT PRINTS INCORRECT ERROR CODES ON FILE DELETIONS	31.10.1 N	Apr 78
NETWORK TRANSFERS OF .BAS FILES	31.10.2 N	Apr 78
NETWORK TRANSFERS OF CONTIGUOUS FILES	31.10.3 N	Apr 78
CREATE NFT/FAL OBJECT LIBRARY FO?R PATCHING	31.10.4 M	Jul 78
RSTS/E-RT11 DIFFERENT BLOCK NUMBER FOR FIRST BLOCK OF FILE	31.10.5 M	Jul 78
INCORRECT DEFAULT FOR MAXIMUM RECORD SIZE ATTRIBUTE	31.10.6 M	Aug 78
FAL		
RSTS/E-RT11 DIFFERENT BLOCK NUMBER FOR FIRST BLOCK OF FILE	31.11.1 M	Jul 78

Component	Sequence	Mon/Yr
RPG II V8.02		
PACKAGE NOTES		
RPG PATCH FILES IN RSTS/E PATCH KIT	32.1.1 N	Jul 78
INDEX SEQUENTIAL FILE ERROR	32.1.2 O	Nov 78
COMPILER		
COMPILER RESTRICTION	32.2.1 R	Mar 78
MOVEL AND MOVE ADDRESSING FAILURES	32.2.2 M	Nov 78
NUMBER OF FILES LIMIT INCORRECT	32.2.3 M	Nov 78
OUTPUT RECORD AND/OR FAILURE	32.2.4 M	Nov 78
OTS		
SEVERAL OTS PATCHES	32.3.1 M	Nov 78
HALT MESSAGE ERROR SEVERITY	32.3.2 O	Nov 78
OVERLAY STRUCTURE DEGRADES PERFORMANCE	32.3.3 M	Nov 78
OTS ERROR REPORTING PROBLEMS	32.3.4 M	Nov 78
PAGING FOR NON-STANDARD LENGTH FORMS	32.3.5 O	Nov 78
LINE COUNTING WITH OVERPRINT	32.3.6 M	Nov 78
PLUS-ZERO OVERPUNCH PROBLEM	32.3.7 M	Nov 78
INDICATOR HANDLING PROBLEMS	32.3.8 M	Nov 78
RELATIVE FILE PROBLEMS	32.3.9 M	Nov 78
MOVE ARRAY PROBLEM	32.3.10 M	Nov 78
EXTRA LINE STARTS PRINTR FILES	32.3.11 M	Nov 78
MULTI-USER FILE ACCESS PROBLEM	32.3.12 M	Nov 78
MULTIPLE PRE-EXECUTION TABLES	32.3.13 M	Nov 78
RPGFNS		
LEADING ZEROES IN UNPACK DECIMAL	32.4.1 O	Nov 78
RPGASN		
ALLOCATE AND APPEND SWITCHES	32.5.1 M	Nov 78
$$X WITH NO EXTERNAL INDICATORS	32.5.2 R	Sep 78
CHANGING ENTRIES WHICH USE /TASK	32.5.3 M	Nov 78
RPGDCV		
CONVERT NEGATIVE PACKED DATA	32.6.1 M	Nov 78
APL-11 V1		
PACKAGE NOTES		
ACCEPTING 8-BIT ASCII	33.1.1 N+	Jan 78
APL.RTS RUN-TIME SYSTEM PATCHES		
"SYSTEM ERROR"S GENERATED BY NULL LINE ELEMENTS	33.2.1 M+	Jan 78
INTERNAL MEMORY ALLOCATION PROBLEMS	33.2.2 M+	Jan 78
ERRONEOUS "DEFINITION ERROR" DURING FUNCTION EDITING	33.2.3 M+	Jan 78
SYSTEM ERROR ON PARAMETER RETURN	33.2.4 M	May 78
DOCUMENTATION		
ERROR IN THE APL-11 PROGRAMMER'S REFERENCE MANUAL	33.3.1 N	Jun 78
DATATRIEVE-11 V1		
DIVISION WITH NUMERATOR OF 0	34.1.1 M	Mar 78
INTERNAL ERROR	34.1.2 M	Mar 78
DYNAMIC MEMORY	34.1.3 M	Mar 78
INTERNAL BLOCKS	34.1.4 M	Mar 78
EXHAUSTED SPACE	34.1.5 M	Mar 78
CERTAIN ASSIGNMENTS MAY CAUSE INTERNAL ERROR	34.1.6 M	Mar 78
INTERNAL ERRORS	34.1.7 M	May 78
THE DATATRIEVE SEQUENCE FIND...; SELECT; PRINT ALL; MODIFY...; FAILS	34.1.8 M	May 78
SPACE IS EXHAUSTED	34.1.9 M	May 78
PRECISION ERRORS	34.1.10 M	May 78
SORT FAILS WITH THE MESSAGE "SORT OUTPUT OPEN FAILED"	34.1.11 M	May 78
CORRUPTED DATA DICTIONARY	34.1.12 M	Jun 78
RECOVERY FROM A CORRUPTED DATA DICTIONARY ELEMENT	34.1.13 M	Jun 78
"AT BOTTOM" OF COMMAND	34.1.14 R	Jul 78
DATATRIEVE REPORT WRITER FEATURE	34.1.15 R	Jul 78
SCALE FACTORS	34.1.16 M	Aug 78
FLOATING POINT DIVISION	34.1.17 M	Aug 78
DATATRIEVE ALGORITHM FOR FIXED POINT DIVISION	34.1.18 M	Aug 78

Component	Sequence	Mon/Yr
REPORT WRITER	34.1.19 M	Aug 78
WISE V1		
UPDATE		
AZX INDEX EXISTENCE FLAG	35.2.1 M	May 78
PROTECTION OF VARIABLE-LENGTH FIELDS	35.2.2 M	May 78
CHANGING CONTENTS OF PROTECTED DATA FIELDS	35.2.3 M	May 78
PROTECTION OF VARIABLE LENGTH FIELDS	35.2.4 M	Aug 78
SKLTON		
FNQ9% FUNCTION	35.3.1 M	May 78
REQUES		
REQ3 DECODING PROBLEM	35.4.1 M	May 78
FIELDNAME ERROR	35.4.2 M	Jun 78
IMPROPER USE OF THE LABEL OPTION	35.4.3 R	Oct 78
RGRADE		
REGRADE SERIES OF PROGRAMS DOES NOT CALCULATE TOTCRED	35.5.1 M	Jun 78
RGRADE SERIES OF PROGRAMS	35.5.2 M	Aug 78
REGSTR		
DIMENSIONAL ARRAYS	35.6.1 M	Aug 78
NETFIL		
CREATING UPX	35.7.1 M	Aug 78
DECAL V2		
QUIZ		
QUIZ01 DOES NOT INTERPRET AUTHOR VARIABLES CORRECTLY	37.2.1 M	Sep 78
CREATE		
END-OF-BLOCK INDICATOR	37.3.1 M	Aug 78
CREATE AND LEDIT1	37.3.2 M	Sep 78
SORT1		
SORT1 GENERATES A FATAL SORT ERROR	37.4.1 M	Sep 78
BASIC-PLUS-2 V1.5		
BASIC2 COMPILER PATCHES		
SOME MIXED MODE ASSIGNMENT STATEMENTS GENERATE NO ERRORS	38.2.1 M	Nov 78
THE COMPILER EXPANSION OF A SYSTEM WIDE LOGICAL DEVICE NAME IS INCORRECT	38.2.2 M	Nov 78
OPTIMIZATION OF CONSTANTS CAN CAUSE ERRORS	38.2.4 M	Nov 78
BASIC2 RUN-TIME SYSTEM PATCHES		
NAME AS STATEMENT DOES NOT WORK PROPERLY, AND MAGTAPE (BACKSPACE) FUNCTION DOES NOT WORK PROPERLY	38.3.1 M	Nov 78
UNLOCK STATEMENT DOES NOT WORK PROPERLY	38.3.2 M	Oct 78
DEBUG LET STATEMENTS DO NOT WORK PROPERLY	38.3.3 M	Oct 78
UNASSIGNED	38.3.4	XXX XX
A NEGATIVE INDEX IN AN ON GOTO STATEMENT CAN CAUSE A PROGRAM CRASH	38.3.5 M	Nov 78
SGN FUNCTION DOES NOT WORK PROPERLY UNDER DOUBLE PRECISION	38.3.6 M	Nov 78
A NULL STRING PASSED TO A SUBPROGRAM WILL NOT BE UPDATABLE	38.3.7 M	Nov 78
MODE 8 PROCESSING DOES NOT WORK PROPERLY	38.3.8 M	Nov 78
NAME AS STATEMENT DOES NOT WORK PROPERLY, AND MAGTAPE (BACKSPACE) FUNCTION DOES NOT WORK PROPERLY	38.3.9 M	Nov 78
BP2COM RUN-TIME SYSTEM PATCHES		
SYSTEM SECURITY EXPOSURE WITH BASIC-PLUS-2 KEYBOARD MONITOR	38.4.1 M	Nov 78
A NEGATIVE INDEX IN AN ON GOTO STATEMENT CAN CAUSE A PROGRAM CRASH	38.4.2 M	Nov 78
A NULL STRING PASSED TO A SUBPROGRAM WILL NOT BE UPDATABLE	38.4.3 M	Nov 78
BASIC2 OBJECT LIBRARY PATCHES		
DEBUG LET STATEMENTS DO NOT WORK PROPERLY	38.5.1 M	Oct 78

Component	Sequence	Mon/Yr
BP2COM OBJECT LIBRARY PATCHES		
NAME AS STATEMENT DOES NOT WORK PROPERLY, AND MAGTAPE (BACKSPACE) FUNCTION DOES NOT WORK PROPERLY	38.6.1 M	Oct 78
UNLOCK STATEMENT DOES NOT WORK PROPERLY	38.6.2 M	Oct 78
DEBUG LET STATEMENTS DO NOT WORK PROPERLY	38.6.3 M	Oct 78
UNASSIGNED	38.6.4	XXX XX
A NEGATIVE INDEX IN AN ON GOTO STATEMENT CAN CAUSE A PROGRAM CRASH	38.6.5 M	Nov 78
SGN FUNCTION DOES NOT WORK PROPERLY UNDER DOUBLE PRECISION	38.6.6 M	Nov 78
A NULL STRING PASSED TO A SUBPROGRAM WILL NOT BE UPDATABLE	38.6.7 M	Nov 78
MODE 8 PROCESSING DOES NOT WORK PROPERLY	38.6.8 M	Nov 78
BASRMS OBJECT LIBRARY PATCHES		
WRITING PAST PHYSICAL END OF MAGTAPE IS NOW TRAPPABLE	38.7.1 M	Oct 78
WRITING PAST PHYSICAL END OF MAGTAPE IS NOW TRAPPABLE	38.7.2 M	Nov 78

RPG-11 V7.06

RPG II V7.06 CAN NOT BE INSTALLED ON RSTS/E V06C-03	01 N*	Dec 77

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Software Product Description

PRODUCT NAME: RPG II for CTS-500 and RSTS/E, Version 7.08 **SPD 13.4.2**

DESCRIPTION:

The RPG II compiler is an easy to use programming language. The RPG II compiler runs under the CTS-500 or RSTS/E operating system in a batch processing mode. It requires as input an ordered set of RPG II source specifications and generates as output a machine language object program. In addition, it optionally produces a source program listing, and/or error diagnostic messages.

To use RPG II, the user creates an exact, detailed description of the data to be processed. This input is supplied to the compiler in a manner that conforms to the format of the RPG II specification sheets. The specification sheets are:

RPG II Control and File Description Specification:

- Header Specification furnishes control information to the RPG II compiler
- File Description Specifications describe data files

RPG II Extension and Line Counter Specifications:

- Extension Specifications provide for detailed descriptions of arrays, record address files, and tables
- Line Counter Specification is used to define the number of lines that are available for printing on a form and to specify at which line overflow should occur

RPG II Input Specifications — furnish a description of input records and data fields in these records.

RPG II Calculation Specifications — define all of the operations to be performed in the user program.

RPG II Output Format Specifications — describe output records and the data fields in these records.

Included among the features of CTS-500 (RSTS/E) RPG II are:

- Complete file processing capabilities for sequential, direct, and indexed files.
- Complete access to RPG II files by BASIC-PLUS programs for creation and modification.
- Table and Array handling capabilities
- Full range of arithmetic operations including square root
- Ability to specify up to nine control level fields and/or matching fields for multiple input file processing
- Ability to perform input and output operations in the calculation section of the cycle

The following components constitute the RPG II Software Package:

- RPG II compiler and object time system
- SORT-11
- Utility programs for converting programs and data files from IBM System/3 to CTS-500 RPG II:
  1. File conversion utility which reads and translates a magnetic tape with source program files and data files written by an IBM System/3.
  2. RPG II source conversion utility which reads a source program, scans for specified incompatible statements and converts them if possible or flags them for conversion by the programmer.
  3. Interactive RPG II/SORT-11 source statement editor.

MINIMUM HARDWARE REQUIRED:

Any valid CTS-500 or RSTS/E disk-based configuration with at least 192K bytes of memory that includes a job swapping area size of at least 40K bytes.

OPTIONAL HARDWARE:

Supports any mass storage, unit record or terminal device supported by the prerequisite software.

PREREQUISITE SOFTWARE:

CTS-500 operating system, Version 4 or later; or RSTS/E operating system, Version 6C or later

OPTIONAL SOFTWARE SUPPORTED:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

The following key (D, E, F, Q, T, V, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP550-AD = binaries on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
F = 7-track Magnetic Tape
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge
Z = No hardware dependency

Standard Options

QP550 -A— Single-use license, binaries, documentation, support services (media: D, E, F, Q, T, V)

QP550 -C— Single-use license, binaries, documentation, no support services (media: D, E, F, Q, T, V)

QP550 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

Update Options:

Users of RPG II, Version 7.06, whose specified Support Category warrant has expired may order the following software update at the then current charge for such update, for use under the existing license. Except where the media is designated as Z, the update is distributed in source or binary form on the appropriate medium. A software update where the media is designated as Z grants the user of RPG II, Version 7.06, the right to copy the previously ordered QP550-H or QP550-W software update for use on an additional single CPU for which a RPG II, Version 7.-06, license has been obtained.

QP550 -H— Binaries, documentation (media: D, E, F, Q, T, V)

QP550 -H— Right to copy for single use (under existing license), no binaries, no documentation, no support services (media: Z)

Users of RPG II, Version 7.06, whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QP550 -W— Binaries, documentation (media: D, E, F, Q, T, V)

ADDITIONAL SERVICES:

None

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

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Software Product Description

PRODUCT NAME: CTS-500, Version 4, Commercial Transaction System **SPD 13.6.4**

DESCRIPTION:

CTS-500 is a software system configuration designed to support general purpose business-oriented data processing applications for the DEC Datasystems 530, 560 and 570 series computer systems. CTS-500 supports an environment of multiple and concurrent interactive data processing, user program development, and batch mode operations activities. Up to 63 concurrent terminal users in both local and remote locations can interact with multiple application tasks. Tasks can share computational, storage, and input/output services provided by the CTS-500 system.

CTS-500 consists of four basic, commercially oriented bundled software packages. All of these include a data management file service system, the RSTS/E operating system, and SORT-11 utility. Specific contents of each of these four software packages are as follows:

CTS-500 Level 2A (CTS-500/2A) — Includes the RSTS/E Version 6C operating system and SORT-11 utility. (RSTS/E Version 6C includes the BASIC-PLUS language processor and RMS-11 record management services). Also included in CTS-500/2A are the DMS-500 data management services package with single key ISAM (indexed sequential access method) and the related DMS-500 sort utility. The BASIC-PLUS language does not support the RMS-11 file organizations and record access modes. The SORT-11 utility cannot sort DMS-500 ISAM files.

CTS-500 Level 2B (CTS-500/2B) — Includes the RSTS/E Version 6C operating system, SORT-11 utility, the DMS-500 data management services package, and the DIBOL-11 business language processor and DECFORM utility.

CTS-500 Level 3A (CTS-500/3A) — Includes the RSTS/E Version 6C operating system, SORT-11 utility, the RMS-11K multikey indexed sequential access record management services, and the BASIC-PLUS-2 language processor.

CTS-500 Level 3B (CTS-500/3B) — Includes the RSTS/E Version 6C operating system, SORT-11 utility, RMS-11K record management services, the BASIC-PLUS-2 language processor, and the DIBOL-11 language processor and DECFORM utility.

These basic CTS-500 software packages are sold and/or supported only with appropriate DEC Datasystem 500 series hardware systems.

MINIMUM HARDWARE REQUIRED:

A valid DEC Datasystem 500 series system that meets the following main memory and mass storage requirements:

Main Memory Requirements

At least 128K bytes of main memory are required for the use of small system utilities, the BASIC-PLUS language processor, DMS-500 data management services, and/or DIBOL/DECFORM. The use of any other language processor and/or RMS-11 or RMS-11K is not supported in systems with 128K bytes of main memory. At least 192K bytes of main memory are required for using language processors other than BASIC-PLUS, and using RMS-11 or RMS-11K.

Mass Storage Requirements

The following mass storage subsystems are considered minimal for:

- installing the system
- loading software updates (software distribution)
- backing up a system disk or second disk drive
- storing all necessary components of the software system

One of the following mass storage and software distribution media support systems is required:

- RP04 disk subsystem (D531 or D571 systems) with one of the following:
  1. TU16 or TE16 9-track magnetic tape transport (distribution on 9-track tape).
  2. TU10W or TE10W 7- or 9-track magnetic tape transport (distribution on 7- or 9-track tape).
  3. An additional RP04 disk pack drive and an RX11 Flexible Diskette system.
  4. An additional RP04 disk pack drive and a TU10, TE10, TU16 or TE16 tape system for software distribution and/or backup, (distribution on 7- or 9-track tape), or a TS03 tape transport for software distribution only (distribution on 9-track tape).
- RP05 disk subsystem (D532 systems) with one of the following:
  1. TU16 or TE16 9-track magnetic tape transport (distribution on 9-track tape).
  2. TU10W or TE10W 7- or 9-track magnetic tape transport (distribution on 7- or 9-track tape).

3. An additional RP05 disk pack drive and an RX11 Flexible Diskette system.
4. An additional RP05 disk pack drive with a TU10, TE10, TU16, or TE16 tape system for software distribution and/or backup, (distribution on 7- or 9-track tape), or a TS03 tape drive for software distribution only (distribution on 9-track tape).

- RP06 disk subsystem (D533 systems) with one of the following:
  1. TU16 9-track magnetic tape transport (distribution on 9-track tape).
  2. TU10W or TE10W 7- or 9-track magnetic tape transport (distribution on 7-or 9-track tape).
  3. An additional RP06 disk pack drive and an RX11 Flexible Diskette system.
  4. An additional RP06 disk pack drive with a TU10, TU16, TE10, or TE16 tape transport sub-system backup and distribution, (distribution on 7- or 9-track tape), or a TS03 tape transport for software distribution only (distribution on 9-track tape).
- RPR02 or RP03 disk subsystem (D530 or DS540 systems) with one of the following:
  1. TU16 or TE16 9-track magnetic tape transport (distribution on 9-track tape).
  2. TU10W or TE10W 7- or 9-track magnetic tape transport (distribution on 7-or 9-track tape).
  3. An additional RPR02 or RP03 and an RX11 Flexible Diskette system.
  4. An additional RPR02 or RP03 with a TE10, TU16, or TE16 tape system for software distribution and/or backup (distribution on 7- or 9-track tape), or a TS03 tape transport for distribution only (distribution on 9-track tape).
- RM03 disk subsystem (D570 systems only) with one of the following:
  1. TU16 or TE16 9-track magnetic tape transport and appropriate controller (distribution on 9-track tape).
  2. TU10W or TE10W 7- or 9-track magnetic tape transport (distribution on 7- or 9-track tape).
  3. An additional RM03 disk pack drive and an RX11 Flexible Diskette system.
  4. An additional RM03 disk pack drive with either a TU10W, TW10W, TU16, or TE16 tape system for software distribution and/or backup, or a TS03 tape transport for distribution only (distribution on 7- or 9-track tape).
- Dual RK05J, or RK05F and RK05J, disk subsystem (D534 systems only) with one of the following:
  1. An additional (third) RK05J or a second RK05J drive (for systems with RK05F).
  2. A TU10W or TE10W, a 7- or 9-track TU16, or a 9-track TE16 magnetic tape sub-system for backup and/or distribution, or a TS03 tape drive for distribution only.

NOTE:

The volume other than the system disk cartridge (the second) requires backup on peripheral storage devices other than the system device. Note that the amount of disk storage available on a minimal RK05 based system may not be sufficient to support all the bundled CTS-500 and optionally supported software.

- An RK06 disk subsystem (D537, D567, or D577 systems) with either one of the following:
  1. A second RK06 or TS03 tape drive for software distribution only (distribution on RK06 or 9-track tape).
  2. Two additional RK06 drives or one additional RK06 and a TU10, TE10, (7- or 9-track) TU16 or (9-track) TE16 tape system for backup of second RK06. A TS03 tape drive can also be included in place of either one of the above, for software distribution only.

NOTE:

A second disk drive or another mass storage device is required for backup of the system storage device.

- An RL01 disk subsystem (D535 system) with one of the following:
  1. TU16 and TE16 9-track magnetic tape transport and appropriate controller (distribution on 9-track tape).
  2. TU10W or TE10W 7- or 9-track magnetic tape transport (distribution on 7- or 9-track tape).
  3. An additional RL01 disk drive with either a TU10W, TW10W, TU16, or TE16 tape system for software distribution and/or backup, or a TS03 tape transport for distribution only (distribution on 7- or 9-track tape).
- An RK07 disk subsystem (D538 system) with either one of the following:
  1. A second RK07 or TS03 tape drive for software distribution only (distribution on RK07 or 9-track tape).
  2. Two additional RK07 drives or one additional RK07 and a TU10, TE10, (7- or 9-track) TU16 or (9-track) TE16 tape system for backup of second RK07. TS03 tape drive can also be included in place of either one of the above, for software distribution only.

OPTIONAL HARDWARE:

Mass Storage Devices

- Up to a system total of eight RK05J DECpack cartridge drives (for dual RK05J systems only).
- Up to a system total of four RK05J or RK05F DECpack drives (for fixed/removable RK05 cartridge drive based system only).
- Additional parity main memory up to a total of 256K bytes (248K addressable) for D530 and D560 systems and up to 3.84M bytes for D570 systems.

- Floating Point Processor (FP11-C) or Floating Point Instruction Set (FP11-A).
- Up to a system total of eight RK06 disk drives attached to RK06 based systems.
- Up to a system total of eight RL01 disk drives attached to RL01 based systems.
- Up to a system total of eight RK07 disk drives attached to RK07 based systems.
- Up to a system total of eight RPR02 or RP03 disk drives attached to an RPR02 or RP03 based on D530 or DS540 or DS545 system. Can be a mixed drive configuration on D530 (RP11 or RP11-E controller only).
- Up to a system total of eight RP04, RP05 or RP06 drives on an RP04, RP05 or RP06 based system. May be mixed drive configurations. RP06 packs cannot be mounted on RP04 or RP05 drives.
- RF11 Fixed Head Disk System with up to eight drives; or RJS03/RJS04 swapping disk for D530 series (RWS03/RWS04 for D570 series) with a total of four drives maximum.
- RX11 Flexible Diskette System with total of up to eight diskette drives. These may be used only for software media interchange or distribution.
- TJU16 or TJE16 (D530 and DS540 systems only) or TWU16 or TWE16 (for D570 systems only) 9-track 800/1600 bpi tape subsystem with up to seven additional TU16 and/or TE16 tape drives (8 total maximum).
- TME11-A, -B 7- or 9-track 800 bpi tape system with up to seven additional (8 maximum) TE10W-B or TE10W-A tape drives.
- TMB11 system with a total of two TS03 drives.

Terminals and Unit Record Equipment

- Up to eight LA11, LP11, or LS11 local (not more than 25 feet from CPU) line printers.
- One (1) CR11, CD11, or CM11 card reader.
- System total of 63 terminals (keyboard-printer and/or keyboard display printer only of the following types: LA30, LA35, LA36, LT33, LT35, VT05, VT50, VT52, RT02, VT50-H and/or IBM 2741 or equivalent).
- Up to 8 remote LA180S (LA180-C or LA180-E) print-only (serial asynchronous communications line interface) terminals will be supported as a spooled line printer only subject to the following constraints and/or conditions:
  1. The LA180S print-only terminal must be connected to the CTS-500 system by a full-duplex line. Operation of this device is not supported by the CTS-500 terminal driver software.
  2. The LA180S must be handled as a spooled line printer by the CTS-500 operating system.
  3. No provision is made by either the software or hardware to ensure integrity of the data transmitted/received on the channel or line.
  4. CTS-500 software does not automatically clear or recover one LA180S-specific synchronization condition. Manual operator intervention is required.
- Up to 15 of the 63 user terminals can be interfaced by single line asynchronous interface line controllers (i.e. KL11, DC11, DL11). The remaining 48 must be interfaced by 16- or 8-line asynchronous multiplexers, (i.e. DH11-AD, DH11-AE, DZ11-E, or DZ11-A). The DH11-A multiplexers must be equipped with a DM11-BB modem control option if auto answer and/or certain other features provided by EIA, RS-232, or CCITT recommendation V.24 compatible interfaces are to be used by the system. The DZ11 multiplexer is capable of supporting full modem control of Bell system type 103 and 113 modems, or equivalent, only.

PREREQUISITE SOFTWARE:

None

OPTIONAL SOFTWARE:

- PDP-11 COBOL Version 3 or later
- FORTRAN IV for RSTS/E, Version 2 or later
- APL-11, Version 1
- RPG II for RMS-11K, Version 8 or later (option for level 3A or 3B)
- RPG II for CTS-500, Version 7.08 (option for level 2A or 2B)
- RMS-11K, Version 1.5/BASIC-PLUS-2 (option for CTS-500/3A)
- DATATRIEVE-11, Version 1
- CTS-500/2780, Version 3.0 (RSTS/E-2780)
- DIBOL-11/DECFORM, Version 4C (option for level 2A systems)
- DIBOL-11/DECFORM, Version 4D (option for level 2A, 2B, and 3A systems)

TRAINING CREDITS:

For CTS-500/2A and CTS-500/3A:

Three (3)

For CTS-500/2B and CTS-500/3B:

Four (4)

Applies only to options that include support services. Consult the latest Educational Services Catalog at your local office for the available RSTS/E and/or DIBOL/DECFORM courses, course requirements, and guidelines.

SUPPORT CATEGORY:

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

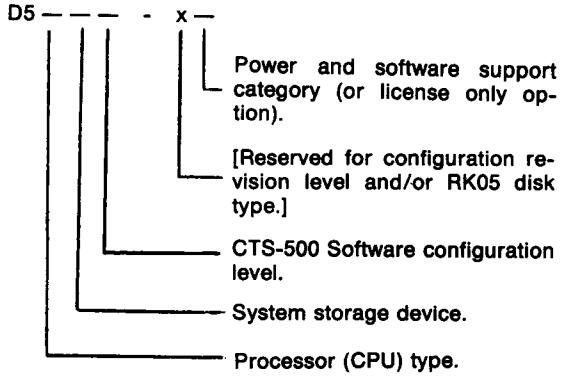
ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

The following character keys are used in the hardware/software system order codes to represent the processor type, system device, software configuration level, form of power and software option. They must appear in the proper position in the order number, as indicated below:


D5 — — — - x —
Power and software support category (or license only option).
[Reserved for configuration revision level and/or RK05 disk type.]
CTS-500 Software configuration level.
System storage device.
Processor (CPU) type.

Processor Type:

3 = PDP-11/34
6 = PDP-11/60
7 = PDP-11/70

System Device:

1 = RP04 disk pack based system
3 = RP06 disk pack based system
4 = RK05 DECpack based system
5 = RL01 disk cartridge based system
6 = RM03 disk pack based system
7 = RK06 disk cartridge based system
8 = RK07 disk cartridge based system

Software Configuration Level:

A = CTS-500 Level 2A (CTS-500/2A)
B = CTS-500 Level 2B (CTS-500/2B)
C = CTS-500 Level 3A (CTS-500/3A)
D = CTS-500 Level 3B (CTS-500/3B)

Power and Software Option

A = 60 Hz power, single-use license, binaries, documentation, and support services.
D = 50 Hz power, single-use license, binaries, documentation, and support services.
Y = 60 Hz power, single-use license only, no binaries, no documentation, and no support services.
Z = 50 Hz power, single-use license only, no binaries, no documentation, and no support services.

For example:

D534A CD D530 system (includes PDP-11/34 CPU, dual RK05J DECpack, CTS-500/2A software configuration level, and 50Hz power supply), single-use license, binaries, documentation and support services.

Standard Options

D53——-C— D530 system, single-use license, binaries, documentation, support services (System Device: 1, 3, 5, 6, 7, 8; Software Configuration Level: A, B, C, D; Power and Software Option: A, D)

D53——-C— D530 system, single-use license only (System Device: 1, 3, 5, 6, 7, 8; Software Configuration Level: A, B, C, D; Power and License: Y, Z)

D534— -C— D530 system with two RK05-J removable disk cartridge drives, single-use license, binaries, documentation, support services (Software Configuration Level: A, B, C, D; Power and License: A, D)

D534— -C— D530 system with two RK05-J removable disk cartridge drives, single-use license only (Software Configuration Level: A, B, C, D; Power and License: Y, Z)

D534— -D— D530 system with one RK05-J removable disk cartridge drive and one RK05-F non-removable disk cartridge drive, single-use license only (Software Configuration Level: A, B, C, D; Power and License: Y, Z)

D56——-A— D560 system, single-user license binaries, documentation support services (System Device: 1, 3, 6, or 7; Software Configuration Level: A, B, C, D; Power and License: A, D)

D56——-A— D560 system, single-use license only (System Device: 1, 3, 6 or 7; Software Configuration Level: A, B, C, D; Power and License: Y, Z)

D57——-A— D570 system, single-use license, binaries, documentation, support services (System Device: 1, 3, 6, 7; Software Configuration Level: A, B, C, D; Power and License: A, D)

D57——-A— D570 system, single-use license only (System Device: 2, 3, 7; Software Configuration Level: A, B, C, D; Power and License: Y, Z)

The following key (D, E, F, Q, T, V, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP512-AD = binaries on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
F = 7-track Magnetic Tape
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge
Z = No hardware dependency

Upgrade Options

To CTS-500 Level 2B:

The following option is available as an upgrade kit from CTS-300 Version 1 or later for use on the same single CPU on which CTS-300 Version 1 or later is licensed. The license previously granted for CTS-300 Version 1 or later shall be extended to cover this upgrade.

QP512 -A— Single-use license, binaries, documentation, support services (includes three (3) training credits) (media: D, E, F, Q, T, V)

QP512 -C— Single-use license, binaries, documentation, no support services (media: D, E, F, Q, T, V)

To CTS-500 Level 3B:

The following option is available as an upgrade kit from CTS-300 Version 1 or later for use on the same single CPU on which CTS-300 Version 1 or later is licensed. The license previously granted for CTS-300 Version 1 or later shall be extended to cover this upgrade.

QP524 -A— Single-use license, binaries, documentation, support services (includes three (3) training credits) (media: D, E, F, Q, T, V)

QP524 -C— Single-use license, binaries, documentation, no support services (media: D, E, F, Q, T, V)

Update Options

Users of CTS-500 Version 3 whose specified Support Category warranty has expired, or whose RSTS/E Standard Program Update Service has expired, may order under their CTS-500 license the following software update at the then current charge for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QR430 -H— RSTS/E Version 6C binaries, documentation (media: D, E, F, T)

QP601 -H— SORT-11 Version 2 binaries, documentation (media: D, E, T)

ADDITIONAL SERVICES:

QR430 -3— RSTS/E Standard Binary Program Update Service (media: D, E, F, T)

QR430 -1— RSTS/E Dispatch Subscription Service (media: Z)

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

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Software Product Description

PRODUCT NAME: BASIC-PLUS-2/RMS-11K for CTS-500, Version 1.5 **SPD 13.7.2**

DESCRIPTION:

BASIC-PLUS-2/RMS-11K is a software configuration option for the DEC Datasystems 530 and 570 series computer systems running CTS-500. The package includes the BASIC-PLUS-2 (Version 1.5) language processor and the RMS-11K (Version 1.5) multikey indexed access data management services. The package is an option for the CTS-500 Level 2A and 2B systems.

The BASIC-PLUS-2 language is a superset of Dartmouth BASIC. In addition to the elementary BASIC statements, BASIC-PLUS-2 also features:

- Terminal-format files
- Virtual arrays
- RMS Record I/O
- Extensive string support
- Full matrix package
- Long variable names
- IF..THEN..ELSE
- ON ERROR condition handlers
- Statement modifiers: IF, WHILE, UNLESS, FOR
- User-defined functions
- Multi-statement lines
- Multi-line statements
- Program segmentation: SUB, CALL, CHAIN, COMMON
- External subprograms

BASIC-PLUS-2 uses the full ASCII character set for its alphabet.

The BASIC-PLUS-2 language processor is composed of a compiler and an Object Time System/Library.

The BASIC-PLUS-2 compiler produces an object module from a source program. The compiler checks each program line for syntax errors and returns an appropriate message if an error is found. The user can then correct the program (if necessary) and compile it. Program compilations result in an object module that can be linked and executed at the operating system command level. On the CTS-500 system, the BASIC-PLUS-2 compiler can produce an image module that can be executed immediately, provided no CALL statement or RMS I/O is referenced.

BASIC-PLUS-2 Record I/O operations are controlled through the RMS-11K file structure. This method of Record I/O supports sequential, relative, and indexed file organizations. RMS-11K features also include primary and alternate keys, fixed and variable length records, and record mapping.

RMS-11K provides keyed access record management services for the CTS-500 system. RMS-11K is comprised of a set of run-time service routines and utility programs that enable keyed access data files, including multi-key ISAM, to be defined, populated, updated and maintained on direct access storage devices. Once established, application programs retrieve, modify, or store logical data records by using key field reference values. RMS-11K run-time service routines provide all necessary access control, data buffering, record blocking/deblocking, and file structure maintenance. Additional utility program functions allow data files to be logically moved, copied, and restored from one storage device to alternate logical or physical storage devices.

MINIMUM HARDWARE REQUIRED:

Any valid CTS-500, level 3A or 3B, system configuration.

OPTIONAL HARDWARE:

None

PREREQUISITE SOFTWARE:

CTS-500, Version 4, Commercial Transaction System, Level 2A or 2B

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

The following key (D, E, F, Q, T, V) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP516-AD = binaries on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
F = 7-track Magnetic Tape
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge

Standard Options

QP516 -A— Single-use license, binaries, documentation, support services (media: D, E, F, Q, T, V) for CTS-500 Level 2A systems

QP521 -A— Single-use license, binaries, documentation, support services (media: D, E, F, Q, T, V) for CTS-500 Level 2B systems

QP516 -C— Single-use license, binaries, documentation, no support services (media: D, E, F, Q, T, V) for CTS-500 Level 2A systems

QP521 -C— Single-use license, binaries, documentation, no support services (media: D, E, F, Q, T, V) for CTS-500 Level 2B systems

ADDITIONAL SERVICES:

None

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

digital

Software Product Description

PRODUCT NAME: DIBOL-11/DECFORM, Version 4D **SPD 13.8.3**

DESCRIPTION:

DIBOL-11/DECFORM, Version 4D, is a software configuration option included with DEC Datasystems (530 and 570 series) running CTS-500 Level 3B. The package includes the DIBOL-11 language processor and the DECFORM screen formatting and file review utility. DIBOL-11/DECFORM, Version 4D, is a file compatible with RMS-11K Record Management Services. The package is an option for the CTS-500 Level 2A, 2B, and 3A systems.

DIBOL is DIGITAL's own business oriented high-level language. It is similar to COBOL in that it has a Data Division and a Procedure Division. Its procedural statements are English-like, but it is a more concise language than COBOL. DIBOL provides the ability to do data manipulation, arithmetic expression evaluation, subscripting of tables, redefinition of records, external calls to other programs, and both sequential and random access to files. Exception conditions cause control to transfer to a user-specified statement which can query status registers to determine the cause of the condition. A comprehensive on-line debugging system permits the program developer to isolate and correct programming errors quickly.

DECFORM is a data entry and file review system utility which enables the development of interactive data entry screen formatting and file review functions. DECFORM provides the system designer with a generalized set of functions. The designer selects the functions needed to implement a particular data entry and/or file review application. In addition to defining screen formats, DECFORM enables the programmer to define field protection, auto-duplication, alphabetic or decimal checking, range checking, field totaling, cross-field validation, and auto-increment characteristics. DECFORM facilitates additions, reviews, changes, and verifications to files.

MINIMUM HARDWARE REQUIRED:

Any valid CTS-500. Level 2B or 3B system configuration with a VT50H or VT52 terminal.

OPTIONAL HARDWARE:

None

PREREQUISITE SOFTWARE:

CTS-500, Version 4, Commercial Transaction System, Level 2A, 2B, or 3A

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

ONE (1) — Applies only to options that include support services. Consult the latest Educational Services Catalog at your local office for the available courses, course requirements, and guidelines.

SUPPORT CATEGORY:

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

The following key (D, E, F, Q, T, V) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP523-AD = binaries on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
F = 7-track Magnetic Tape
Q = RL01 Disk Cartridge

T = RK06 Disk Cartridge
V = RK07 Disk Cartridge

Standard Options

QP521 -A— Single-use license, binaries for DIBOL-11/DECFORM and BASIC-PLUS-2/RMS-11K, SORT-11, documentation, support services (media: D, E, F, Q, T, V) for CTS-500 Level 2B systems, to CTS-500 Level 3B.

QP521 -C— Single-use license, binaries for DIBOL-11/DECFORM and BASIC-PLUS-2/RMS-11K, SORT-11, documentation, no support services (media: D, E, F, Q, T, V) for CTS-500 Level 2B systems, to CTS-500 Level 3B

QP522 -A— Single-use license, binaries for DIBOL-11/DECFORM and BASIC-PLUS-2/RMS-11K, SORT-11, documentation, support services (media: D, E, F, Q, T, V) for CTS-500 Level 2A systems, to CTS-500 Level 3B

QP522 -C— Single-use license, binaries for DIBOL-11/DECFORM and BASIC-PLUS-2/RMS-11K, SORT-11, documentation, no support services (media: D, E, F, Q, T, V) for CTS-500 Level 2A systems, to CTS-500 Level 3B

QP523 -A— Single-use license, binaries for DIBOL-11/DECFORM, documentation, support services (media: D, E, F, Q, T, V) for CTS-500 Level 3A systems, to CTS-500 Level 3B

ADDITIONAL SERVICES:

None

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

digital

Software Product Description

PRODUCT NAME: DIBOL-11/DECFORM, Version 4C **SPD 13.10.0**

DESCRIPTION:

DIBOL-11/DECFORM, Version 4C, is a software configuration option included with DEC Datasystems (530 and 570 series) running CTS-500 Level 2B. The package includes the DIBOL-11 language processor and the DECFORM screen formatting and file review utility. DIBOL-11/DECFORM, Version 4C, is file compatible with DMS-500 Data Management Services. The package is an option for the CTS-500 Level 2A systems.

DIBOL is DIGITAL's own business oriented high-level language. It is similar to COBOL in that it has a Data Division and a Procedure Division. Its procedural statements are English-like, but it is a more concise language than COBOL. DIBOL provides the ability to do data manipulation, arithmetic expression evaluation, subscripting of tables, redefinition of records, external calls to other programs, and both sequential and random access to files. Exception conditions cause control to transfer to a user-specified statement which can query status registers to determine the cause of the condition. A comprehensive on-line debugging system permits the program developer to isolate and correct programming errors quickly.

DECFORM is a data entry and file review system utility which enables the development of interactive data entry screen formatting and file review functions. DECFORM provides the system designer with a generalized set of functions. The designer selects the functions needed to implement a particular data entry and/or file review application. In addition to defining screen formats, DECFORM enables the programmer to define field protection, auto-duplication, alphabetic or decimal checking, range checking, field totaling, cross-field validation, and auto-increment characteristics. DECFORM facilitates additions, reviews, changes, and verifications to files.

MINIMUM HARDWARE REQUIRED:

Any valid CTS-500. Level 2B or 3B system configuration with a VT50H or VT52 terminal.

OPTIONAL HARDWARE SUPPORTED:

None

PREREQUISITE SOFTWARE:

CTS-500, Version 4, Commercial Transaction System, Level 2A

OPTIONAL SOFTWARE SUPPORTED:

None

TRAINING CREDITS:

ONE (1) — Applies only to options that include support services. Consult the latest Educational Services Catalog at your local office for the available courses, course requirements, and guidelines.

SUPPORT CATEGORY:

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

The following key (D, E, F, Q, T, V) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP511-AD = binaries on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
F = 7-track Magnetic Tape
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge

Standard Options

QP511 -A— Single-use license, binaries, documentation, support services (media: D, E, F, Q, T, V) for CTS-500 Level 2A systems, to CTS-500 Level 2B

Update Options

Users of DIBOL-11/DECFORM for CTS-500 Level 2B whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QP511 -W— Binaries, documentation (media: D, E, F, Q, T, V)

ADDITIONAL SERVICES:

None

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
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CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

digital

Software Product Description

PRODUCT NAME: APL-11, Version 1.0 **SPD 14.51.3**

DESCRIPTION:

APL is a mathematically structured programming language that features many operators whose actions generalize to arrays of arbitrary order. APL can define recursive procedures which can use local variables. Because APL is an interpreter, the user can interact with the program to examine and change variables, alter statements without recompilation, and trace program action.

The special APL character set may be used on a terminal supporting it, or may be simulated with mnemonic escape sequences on other terminals. In its simplest mode of operation, APL-11 performs the functions of an intelligent calculator. APL has been used extensively in the areas of science, engineering, education, and business applications.

Some of the features of APL-11 are:

- Dynamically variable user's workspace size (RSTS)
- Chaining of APL programs to previously prepared run-time programs, e. g., FORTRAN
- Multiple statement lines
- Standard PDP-11 file-naming formats
- User workspace saved as files
- Extended single operators (Execute, Quote) which allow the user to:
  1. evaluate without limits a character string (commands, function definition, statement lines)
  2. write user-defined functions to perform output formatting and function editing
- User-level file access:
  1. standard ASCII sequential files
  2. compatible with FORTRAN direct files
  3. compatible with BASIC-PLUS virtual arrays
- APL functions that:
  1. solve a set of linear equations
  2. take the inverse of a matrix
  3. solve an over determined set of linear equations

MINIMUM HARDWARE REQUIRED:

Any valid RT-11 system configuration with least 44K bytes of memory (48K bytes recommended), or any valid RSTS/E system with 32K-40K bytes of memory (depending on the configuration) available for APL.

OPTIONAL HARDWARE:

Supports any mass storage, unit record or terminal device supported by the prerequisite software, and:

- FP11-B Floating Point Processor, or
- FP11-C Floating Point Processor

PREREQUISITE SOFTWARE:

One of the following operating systems:

- RT-11 operating system, Version 2C or later
- RSTS/E operating system, Version 6B or later
- CTS/500 operating system, Version 3 or later

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

C — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

No updates are planned for this product.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category

of support applicable to such copied software is Category C.

The following key (C, D, E, F, Q, T, V, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ906-CD = binaries on 9-track magnetic tape.

C = DECtape
D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
F = 7-track Magnetic Tape
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge
Y = RX01 Floppy Diskette
Z = No hardware dependency

Standard Options

RSTS/E Distribution:

QJ906 -C— Single-use license, binaries, documentation, no support services (media: D, E, F, Q, T, V)

QJ906 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

RT-11 Distribution:

QJ907 -C— Single-use license, binaries, documentation, no support services (media: C, D, E, Q, T, Y)

QJ907 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

ADDITIONAL SERVICES:

None

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

digital

Software Product Description

PRODUCT NAME: DECAL, Version 2, Digital Equipment CAI Author Language System **SPD 15.86.4**

DESCRIPTION:

DECAL, Digital Equipment CAI Author Language System, is the Computer Assisted Instruction (CAI) lesson authoring system. It is designed to enable teachers with no previous computer experience to provide individualized instruction for students. Written in BASIC-PLUS, the language of DIGITAL's Resource Sharing Timesharing System/Extended (RSTS/E), DECAL is suitable for use in any subject area and at all grade levels.

DECAL lessons can present textual material to a student, provide additional help at the student's request, anticipate and respond to both correct and incorrect responses, and dynamically determine sequences based upon those responses to individual lesson sections. Lessons can be up to 50 segments (questions) in length and can be linked with other lessons to form courses and share among schools. Students can leave a DECAL lesson at any point in the lesson, and later return to the lesson at the point where they left off. These features enable instructors to create effective lessons in the area of:

- drill and practice
- tutorials
- quizzes and tests
- dialog/inquiry sessions
- simulation and games
- problem solving

DECAL lessons are interactive and can provide "HELP" messages for all questions requiring a response from the instructor or student. The DECAL system includes provisions for administering, creating, and editing lessons; gathering and reporting lesson and individual student comments and statistics; and, at the discretion of the instructor, limiting and maintaining access to lessons via student directories.

Statistics are collected and stored automatically. Statistics included are the mean, variance, and standard deviation of student scores; summary of answer selections; response time statistics; the names, execution times, and execution dates of lessons and student comments; and summaries of failed questions. The programs are modular and enable the instructor to obtain reports on particular lessons, questions, or students.

Appropriately configured RSTS/E DECAL systems can handle up to 254 instructor accounts, and record statistics for up to 10,000 students.

MINIMUM HARDWARE REQUIRED:

Any valid RSTS/E configuration.

OPTIONAL HARDWARE:

Supports any device supported by the prerequisite software.

PREREQUISITE SOFTWARE:

RSTS/E Resource Sharing Timesharing System, V06A or later.

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

The following key (D, E, Q, T, V) represents the distribution media for the product and must be specified at the end of the order number, e.g., QPE10-XD = sources on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge

Standard Options

QPE10 -X— Single-use license, source license, sources, documentation, support services (media: D, E, Q, T, V)

Upgrade Options

The following option is available as an upgrade kit from EDU-DECAL for use on the same single CPU on which EDU-DECAL is licensed. The license previously granted for EDU-DECAL shall be extended to cover this upgrade.

QPE11 -X— Single-use license, source license, sources, support services (media: D, E)

ADDITIONAL SERVICES:

None

ADDENDUM
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

CATEGORY A

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2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.

DECUS SPECIAL INTEREST GROUPS

A DECUS Special Interest Group (SIG) is an activity whereby members of the DIGITAL Equipment Computer Users Society who share common interests in a particular field, join together to promote the interchange of information. Specialization may be in application areas such as education or industry, specific software systems such as OS/8 and RSX-11, or a specific mainframe such as the DECsystem-10/20.

SIG members derive numerous benefits from communicating with others who share specialized interests and who may wish to share their experiences. SIG s sponsor business meetings, tutorials, and workshops at the various chapter symposia which fulfill the two-fold purpose of fostering communication among users and between users and DIGITAL. Channeled communication provides DIGITAL and the users with insight into the direction of future developments. SIG s provide direct feedback to DIGITAL's in-house activities and have thereby made substantial contributions to OS/8, RSX-11, RSTS and TOPS-10.

User submitted articles, minutes of local meetings, and letters comprise the major portion of the individual SIG newsletters. Suggestions, hints, bug fixes, program plans, or questions of a non-commercial nature are suitable material for SIG newsletters.

SIG members are encouraged to make presentations at the SIG sessions held during DECUS Symposia.

The semi-annual U.S. Symposia sessions are organized by special interest areas. Submissions received from the user community are reviewed by symposia committee members from the special interest groups for appropriate placement on the agenda.

Special Interest Group participation in the review of programs submitted to the DECUS Program Library provides an opportunity to improve the quality and utility of programs available to you and to fellow users.

DIGITAL standards are issued to DECUS members for review and on the theory and philosophy of the standards. DECUS is a voting member of ANSI X3. Users are encouraged to register their areas of expertise with DECUS and assist with reviewing standards. SIG s often play a role in this process.

Below is a list of U.S. based Special Interest Groups within DECUS.

If you would like information regarding membership in any of the Special Interest Groups, contact DECUS U.S. Chapter, 129 Parker Street, PK3-1/E55, Maynard, Massachusetts 01754 or one of the other DECUS Chapter offices in Kanata, Sidney or Geneva.

NETSIG—Networks Special Interest Group
RSTS SIG—RSTS and RSTS/E Special Interest Group
SIGIG—Special Interest Group on Interactive Graphics
ESIG—Engineering Applications Special Interest Group
SIG-18—18-Bit Users Special Interest Group
12-Bit SIG—12-Bit User Special Interest Group
RSX-11/IAS SIG
RT-11 SIG
EDUSIG—Educational Users Special Interest Group
DEBUG—Digital Equipment Business Users Group
MUSIG—Mumps Special Interest Group
PASCAL SIG
DBMS SIG
TECO SIG
LSI-11 SIG
FOCAL SIG
STANDARDS SIG

DIGITAL EQUIPMENT COMPUTER USERS SOCIETY

RSTS-11 Special Interest Group

A Special Interest Group (SIG), as part of DECUS activities, has been formed to serve users of RSTS-11.

The organization of the SIG consists of a SIG Chairman, who will also act as the editor of any forthcoming newsletter, along with a DEC liaison and a SIG Coordinator. The DECUS office will handle the mailing list and circulation of the SIG newsletter. Submissions to the newsletter and other communications can be sent to the following address:

RSTS-11 Special Interest Group
c/o DECUS Office
One Iron Way - MR2-3/E55
Marlboro, MA 01752

SIG's activities encompass the following:

1. Preparation of a SIG newsletter (user submissions are strongly encouraged).
2. Exchange of user written programs. This exchange could include common interest BASIC-PLUS programs such as games, system accounting programs, and sort programs.
3. Establishment of communications with the DECUS staff to obtain for SIG members early information on RSTS-11 related additions to the DECUS Library. These communications will also serve to provide prompt testing of such submissions.
4. Establishment of user input to appropriate groups within DEC, so that they will receive user feedback on any additions or needed changes to RSTS-11. Additionally, respective SIG members may receive early warning from DEC about RSTS-11 changes.
5. Establishment of SIG maintained files of RSTS-11 errors and error solutions, where they exist.
6. Establishment of RSTS-11 "Welcome Wagon" type service to aid new users during system start-up.

If you wish to become a member of the RSTS-11 SIG, please fill out the form below and return it to the DECUS Office. (Please type or print.)

Are you a DECUS Member? _____ DECUS Membership Number _____

NAME _____

AFFILIATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

TELEPHONE NUMBER _____

Are you registered with DEC as an RSTS-11 user? _____

Version Number: _____

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions, problems, and enhancements to DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following DIGITAL Offices: (SPR forms are available from the SPR Center).

AREAS COVERED	SPR CENTER
United States, remainder of Far East, Middle East, Africa Latin America	Administrative Services Group, SWS P.O.Box F Maynard MA 01754
Canada	Digital Equipment Canada P.O.Box 11500 Kanata Canada K2H 8K8 Ontario
United Kingdom	Digital Equipment Corp., LTD Fountain House Butts Centre RG1 7QN Reading England
Australia-Melbourne	Digital Equipment Aust. Pty., LTD 60 Park Street South Melbourne Victoria Australia 3205
Australia-Sydney	Digital Equipment Aust. Pty., LTD 123 125 Willoughby Road P.O.Box 491 Crows Nest NSW Australia 2065
Brazil	Digital Equipment Comercio Ind Rua Batatais 429 Esq AL Campin 01423 Jardim Paulista Sao Paulo 0100 Brazil
Caribbean	De Latin America P.O.Box 11038 Fernando Juncos Sta. Santurce PR 00910
France	Digital Equipment Corp., LTD. Centre Silic Cidex L225 18 Rue Saarinen 94533 Rungis France
Italy	Digital Equipment SPA Viale Fulvio Testi 117 20092 Cinisillo Balsamo Italy
Japan	Digital Equipment Corp., INTL 3rd Floor Kowa Building 8-7 Sanban Cho Chiyoda Ku Tokyo 102 Japan
New Zealand	Digital Equipment Corp., LTD Challenge House 3 Wolfe Street P.O.Box 2471 Auckland New Zealand 10010
Belgium, Holland	Digital Equipment BV Kaap Horndreef 38 3563 AV Utrecht Netherlands
Denmark, Finland, Norway, Sweden	Digital Equipment Corp., AB Englundavaegen 73 TR 171 41 Solna Sweden
Switzerland, Spain, Greece, Romania, Portugal, Bulgaria Yugoslavia	Digital Equipment Corp., SA 20 Quai Ernest Ansermet Boite Postale 23 CH 1211 Geneva Switzerland
Austria, Poland Hungary, Rumania East Germany, West Germany, Russia, Czechslovakia	Digital Equipment Corp., GMBH Wallsteinplatz 2 8000 Munchen 40 Germany 8000
Israel	DECSYS Computers, LTD 7 Habakuk Street Il-Tel Aviv 63505 Israel

DIGITAL EQUIPMENT CORPORATION, Corporate Headquarters: Maynard, Massachusetts 01754, Telephone: (617)897-5111—SALES AND SERVICE OFFICES: UNITED STATES—ALABAMA, Huntsville • ARIZONA, Phoenix and Tucson • CALIFORNIA, El Segundo, Los Angeles, Oakland, Ridgecrest, San Diego, San Francisco (Mountain View), Santa Ana, Santa Clara, Stanford, Sunnyvale and Woodland Hills • COLORADO, Englewood • CONNECTICUT, Fairfield and Meriden • DISTRICT OF COLUMBIA, Washington (Lanham, MD) • FLORIDA, Ft. Lauderdale and Orlando • GEORGIA, Atlanta • HAWAII, Honolulu • ILLINOIS, Chicago (Rolling Meadows) • INDIANA, Indianapolis • IOWA, Bettendorf • KENTUCKY, Louisville • LOUISIANA, New Orleans (Metairie) • MARYLAND, Odenton • MASSACHUSETTS, Marlborough, Waltham and Westfield • MICHIGAN, Detroit (Farmington Hills) • MINNESOTA, Minneapolis • MISSOURI, Kansas City (Independence) and St. Louis • NEW HAMPSHIRE, Manchester • NEW JERSEY, Cherry Hill, Fairfield, Metuchen and Princeton • NEW MEXICO, Albuquerque • NEW YORK, Albany, Buffalo (Cheektowaga), Long Island (Huntington Station), Manhattan, Rochester and Syracuse • NORTH CAROLINA, Durham/Chapel Hill • OHIO, Cleveland (Euclid), Columbus and Dayton • OKLAHOMA, Tulsa • OREGON, Eugene and Portland • PENNSYLVANIA, Allentown, Philadelphia (Bluebell) and Pittsburgh • SOUTH CAROLINA, Columbia • TENNESSEE, Knoxville and Nashville • TEXAS, Austin, Dallas and Houston • UTAH, Salt Lake City • VIRGINIA, Richmond • WASHINGTON, Bellevue • WISCONSIN, Milwaukee (Brookfield) • INTERNATIONAL—ARGENTINA, Buenos Aires • AUSTRALIA, Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney • AUSTRIA, Vienna • BELGIUM, Brussels • BOLIVIA, La Paz • BRAZIL, Rio de Janeiro and Sao Paulo • CANADA, Calgary, Edmonton, Halifax, London, Montreal, Ottawa, Toronto, Vancouver and Winnipeg • CHILE, Santiago • DENMARK, Copenhagen • FINLAND, Helsinki • FRANCE, Lyon, Grenoble and Paris • GERMAN FEDERAL REPUBLIC, Cologne, Frankfurt, Hamburg, Hannover, Munich, Nuremburg, Stuttgart and West Berlin • HONG KONG • INDIA, Bombay • INDONESIA, Djakarta • IRELAND, Dublin • ITALY, Milan, Rome and Turin • IRAN, Tehran • JAPAN, Osaka and Tokyo • MALAYSIA, Kuala Lumpur • MEXICO, Mexico City • NETHERLANDS, Utrecht • NEW ZEALAND, Auckland and Christchurch • NORWAY, Oslo • PUERTO RICO, Santurce • SINGAPORE • SPAIN, Madrid • SWEDEN, Gothenburg and Stockholm • SWITZERLAND, Geneva and Zurich • UNITED KINGDOM, Birmingham, Bristol, Epsom, Edinburgh, Leeds, Leicester, London, Manchester and Reading • VENEZUELA, Caracas •